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ABSTRACT

This workbook, meant to be used in a workshop, presents information on and guidelines for automating small libraries: (1) planning for automation; (2) automated system procurement and evaluation; (3) data conversion issues; (4) sample configuration worksheets; (5) sample configuration costs; (6) site preparation; (7) training; and (8) acceptance testing. Appended materials include a glossary of 100 automation and telecommunications terms; a sample long-range automation plan; guidelines for using MARC (Machine Readable Cataloging) records; minicomputer and microcomputer system comparison; an automation vendor list; a data conversion vendor list; functional specifications; and a 29-item bibliography. (SD)

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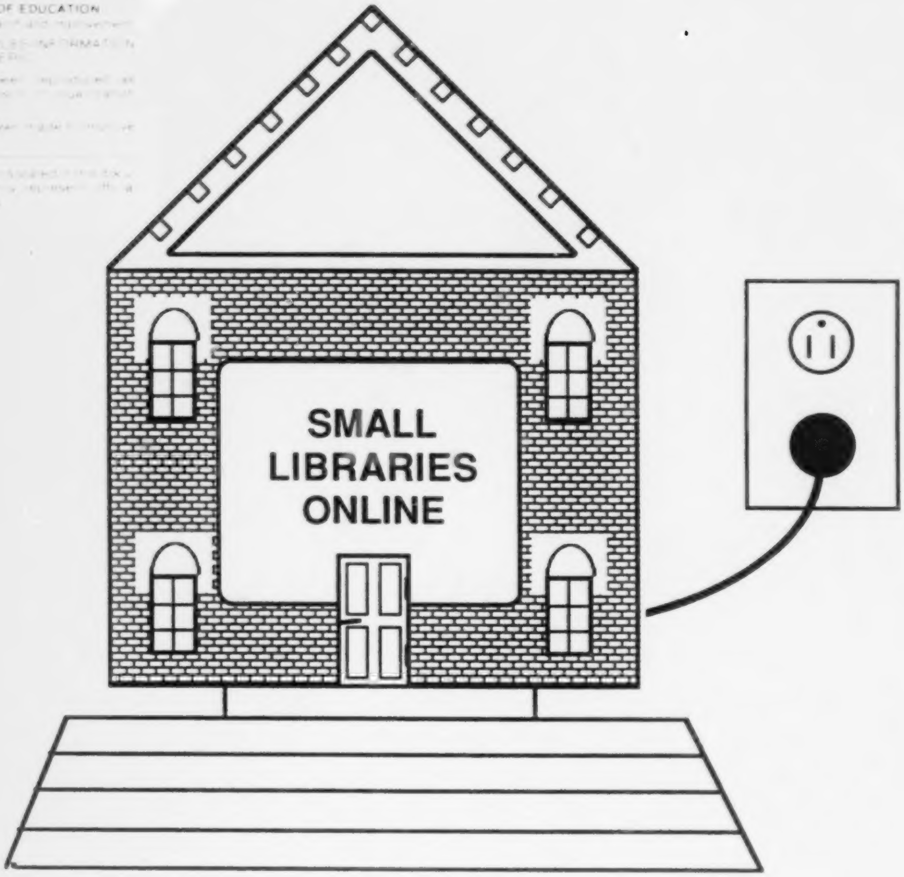

SMALL LIBRARIES ONLINE

A Workshop Series from the Library Development Division
of the Texas State Library

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TO THE EDUCATIONAL RESOURCES

SMALL LIBRARIES ONLINE:

Automating Circulation and Public Access Catalogs

Participant Workbook

A Workshop Presented by:

C. Rebecca Garcia & Frank R. Bridge

Library Development Division

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Table of Contents

Planning for Library Automation	Page	5
Automated System Procurement/Evaluation	Page	23
Data Conversion Issues	Page	41
Sample Configuration Worksheets	Page	51
Sample Configuration Costs	Page	61
Site Preparation	Page	75
Training	Page	83
Acceptance Testing	Page	94
Appendix A: Glossary	Page	95
Appendix B: Sample Long Range Automation Plan	Page	117
Appendix C: Using MARC Records	Page	129
Appendix D: Minicomputer & Microcomputer System Comparison	Page	141
Appendix E: Automation Vendor List	Page	151
Appendix F: Data Conversion Vendor List	Page	159
Appendix G: Functional Specifications	Page	165
Bibliography	Page	187

Planning

- Importance
- Components
  - --Needs Assessment
    - --Formal Method
    - --Quick & Dirty Method
      - --Identify Problems
      - --Take Timings

Planning

So you want to automate? Great! What's your first step?? Getting money? Deciding on a system? Buying a micro? Buying an extension cord and clearing off a desktop?

While most of these activities are important ones that will need to be done eventually, your first step should not be any of them. Your first step should be just what you're doing today. And that's getting **educated**. Embarking on an automation project often points out how little a person really knows about automation. That's okay, in fact it helps to make you slow down and consider your actions rather than rushing ahead without proper thought. So, your first concern is to learn enough about automation to create a successful project. To do this, you'd study written materials, talk to people who have been through this process, attend workshops, and visit exhibits at state or national conferences. That is all part of the education process.

Your second step, closely building on the first is **planning**.

Have you ever found yourself in your car with the engine running and you suddenly realize that you don't have a clue as to where you are going to go??? If so, you know what is is like to attempt to implement an automated system without a long range plan. In order to properly plan for a system, there are quite a few steps that need to be considered before continuing with the automation project.

First and foremost, it is important to know where you are going before you start. In the case of automation, that means that you should sit down and decide what you want to be doing in five years before going out and buying a microcomputer and some software.

Many times automation takes on a life of its own in an organization. It becomes an "end" rather than a means to an end goal of better and more effective library service. That's where looking at a system objectively before you get very involved in the process can be helpful.

To many people, the thought of writing a long range plan is frightening. Even if you are made of sterner stuff, you may feel that it would be impossible to write a long range plan and try to run a library at the same time. I can't tell you that writing a plan is quick or painless or that it will be easy for you to find time to do it. However, I will say that if you don't sit down and think about what you are about to do (which is basically what you do when you write a plan) you will wish that you had.

In order to write a long range plan, you have to understand some things about automation.

> ***Automation won't solve personnel or other organizational problems.***
>
> ***Automation will not save you lots of money or allow you to significantly cut staff.***
>
> ***Automation is expensive.***
>
> ***Automation is not for everybody.***

If you have severe organizational, personnel or procedural problems, automation can exacerbate these rather than eliminate them. Hopefully, by studying the situation in a long range planning process, you will be able to address the non-automation related problems first and then let the benefits of automation stand on their own to justify the system.

There will be some savings in certain manual transactions. And no doubt, the jobs of some staff will be made obsolete by automation (the card filers, for example). However, since small libraries rarely have such specialized staff and since automation requires other job duties and libraries are generally understaffed anyway, very few libraries ever experience an overall decrease of staff. In fact, in some larger libraries, while a clerical employee or two may be laid off, an automation coordinator (at a much higher rate of salary) is often added to the staff.

Automation has a lot of ongoing costs associated with it that are often overlooked in the zeal to embrace the new technology. Automation brings with it new expenses such as software support and dedicated phone lines. While these may not be present in every case, rest assured that the amount quoted to you by the automation vendor of your choice does not include all associated costs of automation.

Finally, remember that since automation is not a cure-all, it is not for everybody. If you are willing to expend the labor and if local situations can justify the time and expense, you will be very pleased with automation. However, if you are being pushed into automation because the library down the street installed a computer, it's time to step back and determine the usefulness of automation for you. While automation can very beneficial in many cases, there are priorities in every situation and sometimes, automation is not the prime objective.

It is important to keep the role of automation in perspective. It is a means to an end of better service; a process; and just as there are always a few different ways to do things, automation is only one of the processes that can be followed to fulfill your goals.

Writing a long range plan is a rather circular activity. You start planning and realize you need more information before you can plan so you start a needs assessment and put the need for a needs assessment in your plan and work on the assessment...You get the idea. Anyway, a needs assessment helps you to determine what you need a system to do. It identifies those areas of your library that require some different attention than they presently receive. In addition, the term "needs assessment" has been used to include the step of the project consisting of identifying functional capabilities. For the purposes of this workshop, a needs assessment will be helpful in identifying problem areas in your library and we will discuss determining functional specifications of a system as a different matter.

In order to try to give you a long range plan that you can use, while taking into account both needs and realities of a smaller library with a small staff, I would suggest that there are some basic steps in a long range plan. If these are followed, they should provide you with enough information and planning to successfully get you through an automation project. If you have the time or staff, you would probably want to consider doing a more detailed planning process; possibly using one of the sources in our bibliography.

In the planning process, many sources note the importance of conducting a **needs assessment** or analysis before writing the actual plan. While some libraries use a needs assessment as a justification for automation, it is actually a method of deciding whether or not automation is needed or justified by identifying the existing problem areas in the library. The formal sequence of events for a needs assessment is:

1. Document general operating requirements of the function being studied.
Identify in general terms the objectives, productivity and services provided by functional area.

2. Study and document present operations
What is the sequence of tasks?
What is the relationship between tasks?
What is the volume of activity or transaction for one or more tasks?
(this helps to determine the role and importance of each task)

3. Identify limitations or inadequacies of the current situation.

4. Identify costs associated with particular functional areas being studied.

5. Combine results of volume of activity (2) with the cost of performing the function (4) to give you the unit costs.

$$\frac{\text{Total Costs}}{\text{Volume}} = \text{Unit Costs}$$

In order to assist you in this process, the following may be used:

Observation, interviews, review of documents, activity survey, flow chart, decision table.

In order to determine whether automation will be cost effective and to assist you in setting goals for automation, libraries often find it helpful to have conducted a needs assessment. If you cannot see yourself ever conducting the formal needs assessment process described above, as a alternative to this formal process, you can approach the situation in the following manner:

1. Identify existing problems in different functional areas of the library.

2. Time library activities related to problem areas.

Think about the areas of circulation , cataloging and the public access catalog.

What **problems or challenges** come to mind?

In a school library, you might have a problem with students forgetting to return material which results in a large backlog of notices to be delivered.

In a public library, you might have an annual circulation of over 100,000 with a staff of three.

In either case, you are faced with clerical tasks that are time-consuming and tedious.

By first identifying existing problems, you are better able to discuss objectives for improvements to the current situation.

Once you have identified problem areas, specify them. By this I mean that you should go into detail about the functional activities that seem problematic. Rather than just saying "circulation", detail all the steps that make up the problem area. Obviously a first step is to determine the parameters of your definition. By this I mean asking the question,"What does that include?" We will say that our premise is that a circulation involves the checking out of a book as well as the filing of the card indicating that the book is checked out. It does not include, for this example, the sending out of an overdue notice or the checking in of the book itself.

Once you have identified problem areas to be addressed, it is helpful to know how much time you are spending in this manner. Some sources discuss specific costing of each activity as well. If you have the time to do this I would wholeheartedly recommend this. In this case, you would time the activities you are studying, then "cost out" the resources involved in the activity, and compute a unit cost of service.

For example, say I want to determine the cost of charging out a book.

I have found that my library circulates 60,000 materials annually. We have a card system in use that requires that the patron write their name on each card to check the book out. We then file the cards by date due. I time circulation activity and I find it takes, on an average, 1 minute to check out a book. I have a circulation clerk who takes care of the area. She is paid $4.45/hour. Including benefits, she makes about $4.90/hour. In the circulation process, we use cards (app. .03/card/12 uses or .0025), pencils (.0006), filing drawers and flags, etc.; let's say all this comes to about .01/use. In addition, it takes the circulation clerk about 1 minute to file each card. So the approximate cost of a circulation transaction is:

.16 (2 minutes of my clerk's time) + .01 (supplies) = .17

Seventeen cents to circulate a book. And, of course, this does not take overhead such as facility or utilities into account.

Therefore, you have gathered information about both the time an activity requires as well as a rough approximation of the cost of that activity. It can be very helpful to quantify these problems so as to better describe them. If you are able to say, "each circulation presently takes one minute to complete and since I do 50 circulations an hour that doesn't leave much time for anything else" rather than " We sure are busy at circulation"., chances are your funding authorities will better understand your situation. Costing information usually strengthens your case as well as helps you to determine how much more you will actually be spending for automation. More information about costing especially as regards the automation project is covered later in the manual.

If you cannot find the time to cost out activities completely, at least detail the time spent on the average on each of them. This will prove helpful when evaluating the success of your system later.

These steps are preliminary to the writing of a long range plan. Though you may include them in a long range plan, they can give you the background you need to set service objectives in the plan.

- --Long Range Plan
  - --Project History/Description of Current Situation/Perceived Benefits
  - --Project Goals & Service Objectives
  - --Strategies
  - --Project Organization & Governance
  - --Description of Computer Environment
  - --Project Staff
  - --Project Resources
  - --Project Timetable & Milestones
  - --Local Needs
    - --Storage
    - --Workstations
    - --Technical Expertise
    - --Functionality
    - --Support/Training/Maintenance

A **Long Range Automation Plan** is extremely helpful in identifying your needs and expectations. Many times, librarians find themselves reacting to someone outside the library who has determined what they think will best serve the library's needs. If you have an accepted long range plan already in place, this situation is much less likely to occur. If you can show that you have carefully evaluated the alternatives and this is the best answer for your institution, it is much easier to keep control of the situation. Although it is difficult to believe, even libraries "come into money" at times. And if you have a plan for how that money should be spent, you are much more likely to retain the use of it.

A plan should include the following components:

1. Project history/Description of Current Situation/Perceived Benefits
2. Project Goals and Service Objectives
3. Strategies
4. Project organization & governance
5. Description of computer environment (single institution, network, shared system, etc.)
6. Project Staff
7. Project Resources
8. Project Timetable and milestones
9. Local Needs (described or specific)
    - Storage
    - Workstations
    - Technical Expertise
    - Functionality (Software modules)
    - Support/Training/Maintenance

Keep in mind that your funding authorities may require additional information in your local long range plan. The plan detailed here is a general one that should be extremely helpful to you, however, it is important to "know your audience". If your funding authority is very interested in computer hardware, for some reason, you may have to discuss the type of equipment you expect to purchase. If your funding authority is very mindful of costs, it may be necessary for you to detail 60-month costs in a budget document to be amended to the long range plan. A budget document is discussed in the "Sample Configuration Costs" section of this workbook to assist you in that regard.

In writing a long range plan, you should first describe the project and give a brief **history** of the library. This will help to "set the stage" for the plan itself. Some libraries include a discussion of local activity or perceived benefits of automation as well.

Then you must determine the **goals** of the automation project. A goal is not measurable but is a broad, general statement of intent. For the goal of the project, you should build on any existing goals or mission statements you have developed for the library in general. For example, if the mission of your library is to "Provide excellent service to our community" and one of your goals is to "Provide efficient and accurate circulation service", you can build on those two statements in your automation goal by noting a desire to "Provide better control over the collection". Since automating circulation increases your control over the collection, it is an appropriate goal.

After setting goals, you must set **objectives** (at least one per goal) for your project. Objectives are more "action" oriented than goals and include an aim that is specific, measurable by either quantified criteria or date and achievable. For example, one objective that would assist in meeting your goal of better control would be to install a local circulation system by "x" date.

Once you have determined your objectives, you set up **strategies** or activities that will help you meet those objectives. This step is one of the most specific and concrete in the entire plan as it outlines an action plan you intend to follow to meet each measurable objective. If, during the fulfillment of the plan you realize that things are not going as you had envisioned, it is perfectly acceptable to change your strategies to meet the objectives you have established.

While all this planning may seem like a waste of time at first glance, even the smallest library can benefit from planning. You probably do a lot more planning right now than you realize. Certainly you look at your book budget at the beginning of the year to determine what areas of the collection you will try to augment and which ones will stay the way they are. Chances are you also know how far ahead of time you will have to order books in order to expend all your funds by the end of the fiscal year. Your aim is to spend all the money you have by that date: no more, no less. And whether or not you formally write this down and follow procedures to do this, you are planning your actions so that you achieve your goal.

Next you should include a **description of the "computer environment"** that you envision for this project. Will this be one computer system in a single institution? Will it be a local area network set up with one larger microcomputer and smaller microcomputer workstations connected to it? Will there be one large computer shared by a few institutions in a network?

Your next step is to discuss **project organization and governance**. This would be more appropriate in a larger library setting; for example, if a school district of three schools were attempting to automate together, or if two public libraries from nearby cities were pooling their resources, this should be addressed. In this case, you would discuss which of the three libraries would be responsible for the system (or is everyone going to be responsible for their own local system that is a "standalone" one?). Who will make decisions as to the system purchased or parameters that need to be set concerning the system? Also, if the system is to be purchased out of separate budgets, how will these costs be allocated and determined? In any shared situation, these issues must be addressed ahead of time to avoid confusion at a later date.

Next, you will discuss how you intend to go about **procuring** a system. This makes you stop and consider what needs to be done before you proceed. This is definitely an area that you would consider even if you didn't do a formal plan. At some point or another you have to sit down and decide how you will go about getting the system that you want into your library.

Then you must discuss who will be in charge of the project and who will be active in it. Of course, in a small institution, you may be "it".

A discussion of existing **project resources** is also helpful. Is there a predetermined budget that you have already set up? Or is raising money one of the first steps in your task list? Have you "inherited" some money recently? Or has the city suddenly decided they need a new computer and that "you can have our old one"?

In order to assist you in your project, it is necessary to set up a **project timetable** and associated **milestones**. This helps to put into perspective the tasks that need to be undertaken in the project. In larger institutions, it is possible to have more than one task going on at the same time. However, depending on your institution, you may not have this option. This is because you can normally only handle as many tasks as you have staff to undertake them. Because, however, you do have the opportunity to send out some of the work to be done outside the library (retrospective conversion, for example), there may still some chance of overlap.

Next, the plan should include some discussion of **local needs**. There are a variety of local needs that must be addressed in an automated system and these should all be specified as closely as possible before actual system procurement. At the time of the writing of a long range plan, it may be that it is not possible to specifically designate all of these. However, they should at least be discussed in the plan and later, before contacting vendors for information, they should be specified. These needs include:

Storage: How many title records are held in the library? How many records will be in the library in the next 4 or 5 years? If in doubt, estimate a bit high. Storage space is relatively cheap and it is better to have a disk that has some extra space on it than to not have enough room to work. How many item (copy) records will the library have? How many patrons do you estimate that you serve and will serve in the next four or five years? How many serial titles does your library receive? What is the rate of acquisition in your library? All these things have impact on the storage space you will need in your local system and should be described to the vendor when you discuss a local system.

It is important to identify the library's holdings and transaction load estimates for the next five years. Even though the technological life of a microcomputer-based system is only four years, it is acceptable to estimate these needs through five years from installation. Answering the questions listed above helps you better to describe the system you need as well as assists the vendor in properly configuring a system for you. The number of records you have to store on the system impacts the system performance, as does the amount of use you make of the system itself through the workstations in operation. A system that does not have enough power to adequately support you institution will result in the frustration of both yourself and your patrons. This is why it is very important to identify each of these needs ahead of time. In order to help you summarize these needs, you can make use of the following form:

Storage Needs:

1. Bibliographic (Title) Records

Year 1	Year 2	Year 3	Year 4	Year 5
______	______	______	______	______

2. Volume (Item) Records

Year 1	Year 2	Year 3	Year 4	Year 5
______	______	______	______	______

3. Patron Records

Year 1	Year 2	Year 3	Year 4	Year 5
______	______	______	______	______

4. New Acquisitions

Year 1	Year 2	Year 3	Year 4	Year 5
______	______	______	______	______

5. Serial Titles

Year 1	Year 2	Year 3	Year 4	Year 5
______	______	______	______	______

6. Annual Circulations

Year 1	Year 2	Year 3	Year 4	Year 5
______	______	______	______	______

Workstations: How many terminals or microcomputers do you need in your library? Once you have determined the software modules that you are interested in (for example, circulation and online public access catalog) it is important that you think very carefully about how many terminals you need for each of these modules. Sometimes, different workstations are needed for different applications and if you don't know how many will be used in each instance you will not be able to get a proper count.

Remember that you will now do everything on a terminal. If you do not have a workstation available for that function when you need it, it will not get done. For example, at the **circulation** desk, it is easy to think in terms of check-out. However, will you be registering patrons at the circulation desk? Will you be checking books in at the desk? Will you be putting holds on books at the desk? Will you be accepting payments for fines at the desk? Will you be conducting inquiries to the system regarding patron records or book status at the desk? Of course, you would not automatically purchase one terminal per activity. That would mean that you'd probably end up with two times as many terminals as you have staff. Which brings us to another important point. If you only have three staff members in your library, while you will want enough terminals to do each task, it won't increase your productivity very much to have twice as many workstations as people to work them. You need to look carefully at how much time you spend in each activity, consider the number of staff that will be working in this area and make your decision accordingly. This topic will be discussed in more detail later in the manual.

In addition, it is difficult to determine how many **online public access catalogs** (OPAC's) you will need. There are quite a few different "rules of thumb" concerning the number of OPAC's needed. Some of these include: 2 OPAC's per circulation terminal, 3 OPAC's per circulation terminal, 1 OPAC per every 5,000 circulations per month. While all of these may work in different situations, it is really best to attempt to study the usage of your own catalog and thereby determine how many terminals you will need locally. You can do this by checking the number of people using your catalog at different times during the day. For example, you count the users of your catalog six times during the day, and at the heaviest use time, there are 6 people using the catalog. At all other times, there are less than 3 people using the system. You decide you will have 4 terminals for OPAC; this will mean that most of the day, one terminal will be free and at some point during the day, there will be 2 people waiting to use the catalog. Keep two things in mind: first, if you put most of the OPAC's on high tables people will not stay as long ; secondly, if you place printers near OPAC's, while it will cost extra for printers, paper and table space, people will print off the information they need and not spend time copying from the screen.

You also need to think about what you will be doing about **ongoing cataloging**. Will you be using a system other than the local one to do your ongoing cataloging? If you will be using a CD-ROM based system, MARCIVE or something along that line, you must discuss this with the vendor to determine how these two different systems will work with each other. Many vendors offer what is called a bibliographic interface between your cataloging system and the local computer, however, not all vendors offer interfaces to all cataloging systems and it is important to inquire into this ahead of time as well.

The terminal/workstation form is a summary sheet for use in estimating the number and type of workstations you will need. You should number the terminal/workstation, identify the location you are considering for it (i.e., "circulation desk"), mention the primary functional task it will have (i.e., "circulation control/check-in"), and any associated peripherals such as light wands or printers. Further information on specific forms to be used at each workstation being considered is given in the section on costing a local system in this workbook.

Terminal/Workstation Needs

Workstation #	Location	Primary Functions	Peripherals

Technical Expertise: What kind of background in library automation do you have in the library? Have you previously automated another library? Have you never turned on a computer before? It is often helpful to discuss this in a plan, as well as addressing any plans you have for getting yourself and your staff prepared to undertake this project.

Functionality: What are your needs as far as functionality are concerned? What are you looking for in a system? First of all, you will decide what software modules you are interested in and next you will look at each of these and determine what specifically you need for the system to do. Are you only interested in a circulation system? Do you want to start with an online public access catalog and automated cataloging? Or do you want to system that will do all these things? If you envision "phasing in" your system to finally include these three modules, you should mention those plans here. Remember, the purpose of this process is to plan for automation. If that includes facilities that will not be in place until the fourth year of the plan, it is still desirable to discuss them.

For the purposes of a long range plan, it is really only necessary to discuss functionality in broad terms. When you reach the procurement stage, you should have much more specific ideas of what you want in a system. However, until you become more familiar with what is available as well as look at your local needs, you are usually not in a position to construct functional specifications lists.

Support/Training/Maintenance: You should note the needs you have in the way of support, training and maintenance. Chances are good that you will want to have strong support from your vendor. This could translate into meaning that you would like an organization that has a large support staff. It may mean that you would prefer not to buy the software package that Mr. Jones put together last weekend and that he alone, in the entire world, knows how to use. Mr. Jones' software could be fine, it's just that you would rather that the support of your system not be tied so closely to one individual.

In the area of training, you have to determine if you will be willing to pay extra for training from the vendor. Costs for this range from $500 - $1,100 per day. It is usually well worth it to have had this kind of introduction to system use as well to have the vendor actually install the software and hardware. While it may not be an option in the software you purchase, it is usually a good investment if available.

Hardware maintenance for microcomputers is usually handled locally. There are two schools of thought on this. Since microcomputers are fairly inexpensive and are intended to last only about four years anyway, the idea of paying hundreds of dollars for maintenance per year seems a bit excessive. On the other hand, if you have problems with your computer hardware and you have to stop what you are doing to unhook the down terminal and carry it over to the neighboring large city where there is a computer store, you may be willing to pay for the peace of mind. However, if you are considering a super-micro or mini-computer based system, maintenance is essential. **Software maintenance** is normally addressed with software support and will include access to software upgrades and "software fixes" as time goes on.

In Appendix B of this workbook there is a sample of a long range plan written for a fictitious library to give you an idea of how these components would fit together. Keep in mind that requirements for long range plans can vary with local situations so it is best to consult the funding authorities you are hoping to apply to for more information about their requirements.

Following planning, the next step in the automation process is system procurement.

System Procurement

1. Informal Demonstrations
2. Creation of a Functional Checklist (Evaluating Systems)
3. Formal Demonstrations
4. "Ballpark" Price Estimate
5. Consult References
6. Determine top 3 vendors
7. Contract Discussions
8. Check on prices for specific local systems
9. Site Visits
10. Purchase System

Procurement

When purchasing a mini-computer based system, libraries often take advantage of the Request for Proposals (RFP) process. This includes sending out a listing of functional specifications that are required by the library and having the vendors comment on their ability to attain those and any other requested facilities or services. However, in the case of the procurement of a small system, vendors are often less interested in answering involved RFP's for the amount of return on their investment with the sale of a small system. Therefore, in a small procurement, you are faced with the prospect of attempting to make your decision without the aid of an established procedure. You can consider the steps discussed in this section as a possible alternative to the RFP process. While it still involves a great deal of work on the part of the library, it offers a chance to compare systems somewhat objectively as well as lessening the amount of time the vendor will have to spend on your procurement . Both of these factors make this procedure a realistic alternative that should assist you in your choice of a system that will fit your local needs.

As we discussed in the section on planning, embarking on an automation project usually points out how little you know about automation. After you get through the planning process, you know a lot more about automation and probably at least a little more about your own organization. You will need that knowledge now, when you begin to construct your functional specifications list. As you think about the functionality you need in a system, keep in mind the important but often overlooked cornerstone rule of automating your library:

Automation does not necessarily mean transferring your manual processes and procedures directly into machine-readable data files.

While you were studying the problems (challenges?) faced by your library, you considered automation as a way to meet these needs. It may also be that those procedures should be changed in light of automation. Perhaps there are things that you do locally simply because you have been unable in the past to handle them any other way. For instance, some experts have suggested lengthening loan periods in small libraries to lessen the number of overdue materials and other associated tasks. Now that you are automating, you will not be under these same constraints and you may decide to change some of your procedures. Don't get caught doing things just because "they've always been done this way". One major side-benefit of automation is that it is a perfect time to change policies or procedures of the library. Your patrons will be getting used to so many changes, they should be able to handle one or two more.

Informal Demonstrations:

In your long range plan you discussed the functional modules that interested you (like circulation or the online public access catalog). At this point, however, it is necessary to specify more closely the functionality you are interested in in a system. In this aspect, this procurement is very much like the more involved one inherent with a larger system. In order to prepare to create the functional specifications, you should be familiar with how a system operates. If you have never seen an automated system, or if you have never looked closely at one, it is important to do this before you begin to construct these specifications. The easiest way to do this is by attending exhibits at a library convention. At the annual Texas Library Association meeting and both meetings of the American Library Association there are numerous booths dedicated to automated systems. These offer a perfect opportunity for you to get a quick and varied introduction to the vast world of automation.

At these exhibits, take a look at the products that offer an automated system and just watch a demonstration. Or, go up to the booth and put in a search (think of some search terms ahead of time) and see what you get. Watch the way searching is done rather than the actual "hits". Normally vendors use only a small sample of records at a demonstration so response time (the time you wait for an answer to a question you've entered) is not necessarily indicative of what it would be like in your library. Try checking out a book. Imagine using this procedure at your library. Would it fit in with the way you do things? Or, do you like the changes you would have to make to make it fit? Once you have seen a few of these systems, you start knowing what to expect.

Keep in mind that every vendor would like to be either first or the last system you see. This is because they would like to show their system in the best possible light. They would like to be first because you will be extremely impressed by the first system you see. They would like to be last because you will best remember them. Also, try to focus more on the system than on the personality of the salesperson. While it is true that you would like to buy from a company that has nice employees to help you, remember:

1. People change jobs.
2. Salespeople are probably not the people you go to with problems of system operation.
3. Salespeople make their living being personable.

Therefore, try to keep an open mind about systems, note the order in which you viewed demonstrations, make a note if the salesperson was sweeter than aspartame and understand related impressions.

Functional Specifications:

In order to purchase a system from the variety of those available, it is important to be able to evaluate the systems as regards your local situation. This is an area that is very misunderstood. If you are buying a stereo, it is easy to consult a guide such as "Consumer's Reports" and see what is billed as the most cost effective system. Many times, librarians call and ask for a recommendation on what library automation software package is the "best". They are usually very disappointed to hear us say, "It depends".

However, in this case, it really does depend on your local situation. In addition, you have to consider how you conduct your business now to determine if the functions described are adequate for you. For example, if you work in a school library where you have to report delinquent students to the office every semester, but only need to report delinquent teachers annually, you would probably prefer to have delinquency lists that can be generated by patron category so as to rule out printing teacher's names as well. In a public library, if you calculate the cost of a lost book using the book's actual cost plus a processing fee, you would probably want a system that would allow you to manually add charges at the desk or one that would automatically add a fixed processing fee to a lost book. In an academic library, you might want a system that can automatically load patron records from the college computer into your local system.

As an example, let's take a look at a few functional specifications (in bold-faced type following) and discuss why they may or may not be of interest in your local situation:

The system should allow easy access between various functions in the Circulation Control System with a minimum of keystrokes. An operator should not have to "back out" of a function and re-enter another related one.

Some systems are set up on a "tree"-like structure in that the entry to any subsystem (such as checkout or checkin) has to be from the top level. Therefore, if you are in the checkout module of the system and someone wants to check a book in or pay a fine before they checkout some other books, you have to exit the checkout program and go into the other subsystem in order to complete the transaction. Other programs provide for more "lateral" movements within the system. This is a local decision in that it may be that you don't mind exiting one program in order to take care of other business or that you feel if you have to consciously make that change there will be less chance of confusion.

The system patron data entry process should be easy, store all of the necessary patron information for your library operations, and permit the chargeout of materials immediately upon registration. Some specific items to include would be:

--sufficient numbers of patron categories, with different automatically assigned borrowing privileges and statistical tracking for each group

--branch registration locations

The definition of "sufficient" numbers of patron categories is a typical local question that must be determined by looking at your users. Patron categories are used for stastical counts as well as for borrowing privileges. For example, if you want to allow some patrons to checkout more books out than others you have to determine the different groups of borrowers that you have and the privileges for each. Also, even if you have determined that everyone will have the same borrowing privileges as far as loan periods and number of materials borrowed, you may want to be able to collect information about patrons that you see as different "groups". For example, you may want to count young adult circulations or certain age groups of adults as borrowers. If you do not have the ability to identify these groups as separate from the total patron universe, you will not be able to distinguish them for report counts. As mentioned earlier, automation presents an opportunity to modify procedures or policies. Perhaps you have always wanted to have a shorter borrowing period on Best Sellers than other books but it was too much trouble with a manual system. Now is the time to consider policies you have long wanted to change and include those needs in the functional specifications lists you are considering for your system.

If you don't have branch locations, bookmobiles or any other "satellite" stations, any mention of these in "canned" functional specifications lists are probably not applicable.

Notice production should contain the following features:

--production/printing/reprinting of the notices in zip code order, in a format suitable for data mailer forms use (these forms eliminate the need for envelope stuffing)

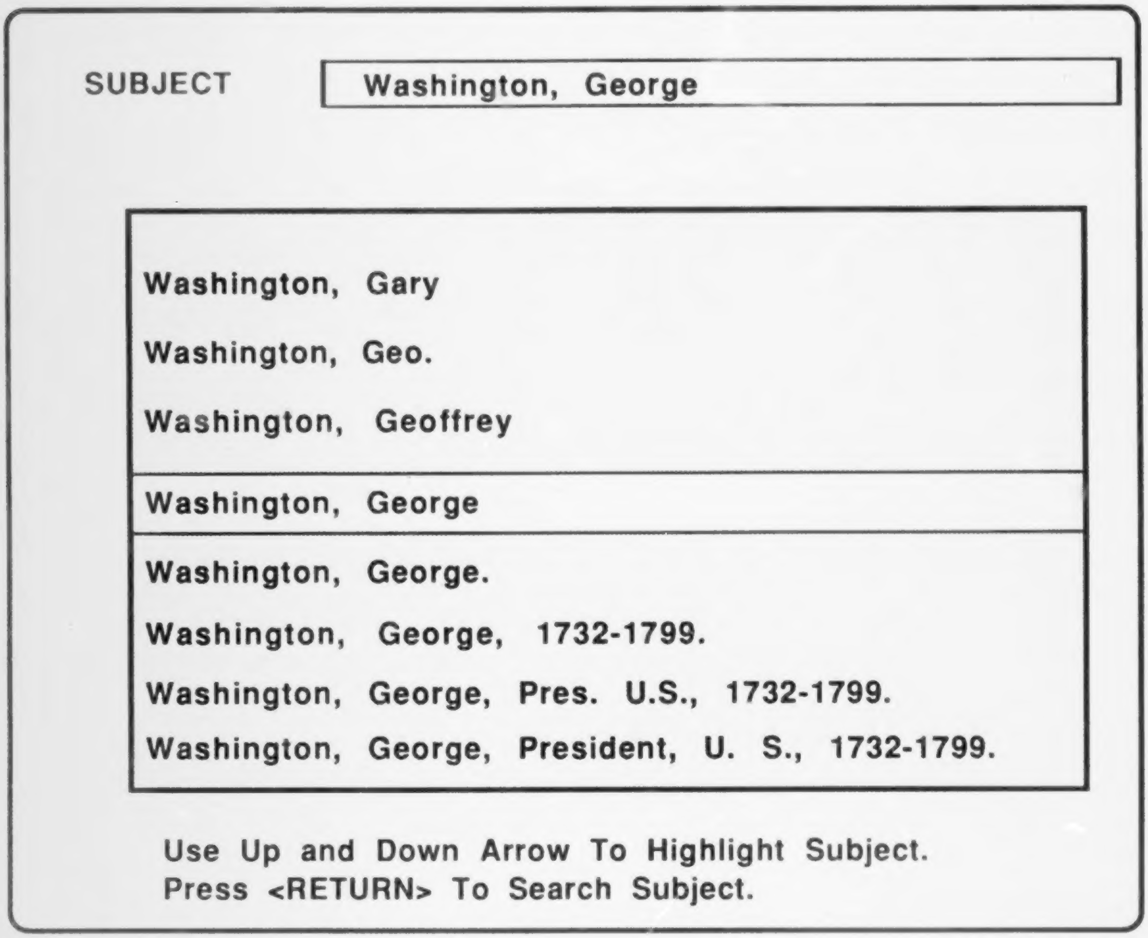
If you are not interested in the use of data mailer forms as an option, this function would not be important to you. Though data mailers are a real time-saving device in most situations, they are more expensive than plain paper and in some areas, they have an additional postal charge associated with them.

System OPAC must provide access to and display information contained in the shelflist, with item records, by providing access by call number.

Not all systems provide for call number access. If this is not important to you then it would not be included in your functional list of mandatory items. This type of listing can be very helpful when you stop keeping a paper shelflist file, as well as providing the capability to "browse the shelves" by displaying material that would shelve alongside each other.

System should provide for browsing of the database.

"Browsing" a heading can mean different things to different vendors. Normally, browsing means access to an alphabetical listing of terms with the term of your choice highlighted in some way in the list. It is much like entering a dictionary of entries and it shows how the term is entered and sometimes also indicates how many records there are in that heading. Browsing can be very helpful in determining whether the search term you have entered is actually found in a slightly different form in the catalog. This facility, however, is not as helpful as a thesaurus facility or good cross-references.



```
SUBJECT    Washington, George

Washington, Gary
Washington, Geo.
Washington, Geoffrey
Washington, George
Washington, George.
Washington, George, 1732-1799.
Washington, George, Pres. U.S., 1732-1799.
Washington, George, President, U. S., 1732-1799.

Use Up and Down Arrow To Highlight Subject.
Press <RETURN> To Search Subject.
```

System should provide for boolean searching of the database using "and, or, not" expressions.

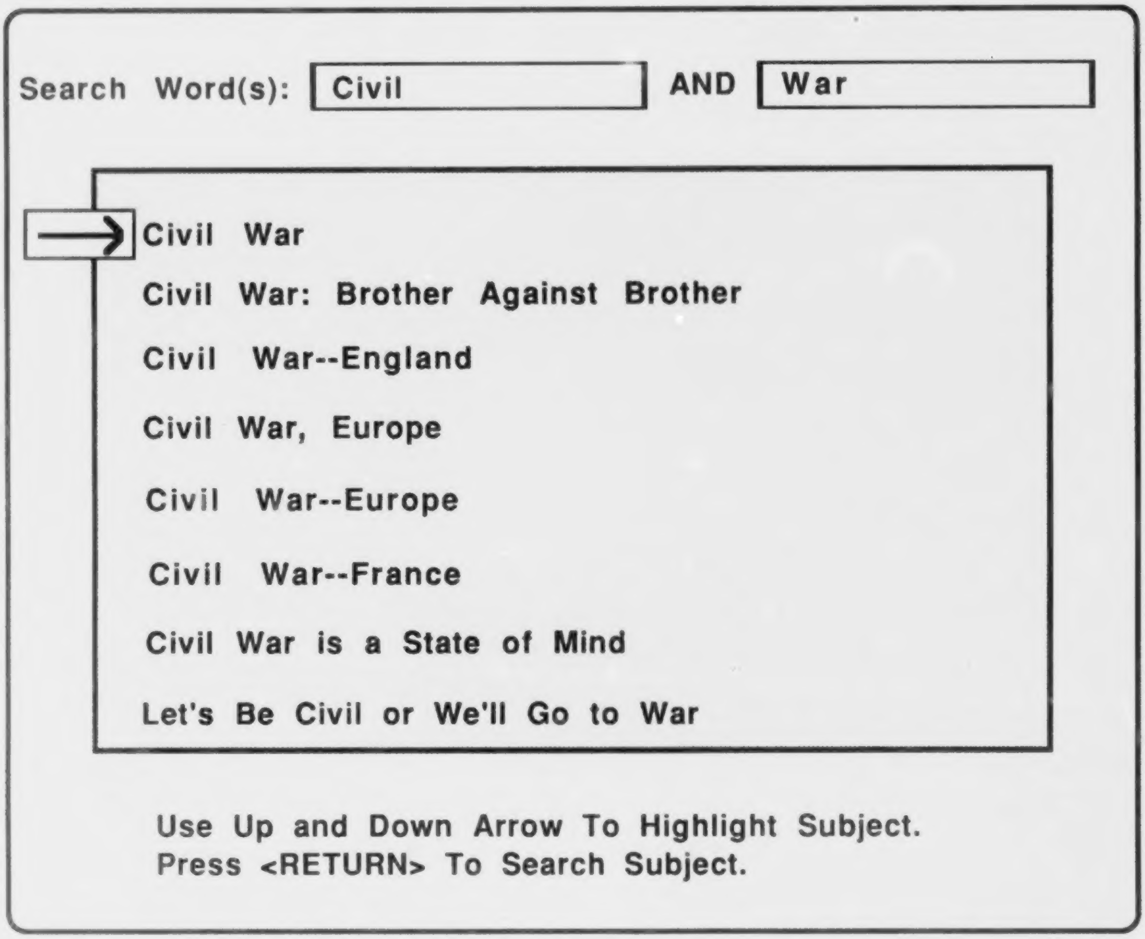
Boolean searching is very helpful in narrowing or widening a search. It is a technically difficult search to provide and also tends to be very "machine-intensive", meaning that it requires a good deal of computer power. Therefore, some systems will not be able to provide this capability.

Boolean searching is one of those library terms that everyone hears about when there is any discussion of online searching. This facility makes use of "and, or,not" expressions to limit or expand searches.

Two terms that are connected by "and" result in a more narrow "hit" report since the resulting records must have both term A. **and** term B. present. In contrast, two terms that are connected by "or" result in a expanded list of "hits" because the resulting records may have either term A. **or** term B. to qualify as a hit.

The "not" expression is often used cautiously for fear of losing good references, however, if you know that the term you are searching for may result in a good many "false hits" due to a certain non-associated term you can specify that term with a "not" expression.

For example, in the figure following, the terms "Civil" and "War" were joined for a search. The hits retrieved included some referring to civil wars outside the U.S. If you wanted only references for the U.S. Civil War you could use "Civil" and "War" not "England" (or "not Europe"). However, if there were a book on England's role in the U.S. Civil War, you would not retrieve it.



Search Word(s): Civil AND War

→ Civil War

Civil War: Brother Against Brother

Civil War--England

Civil War, Europe

Civil War--Europe

Civil War--France

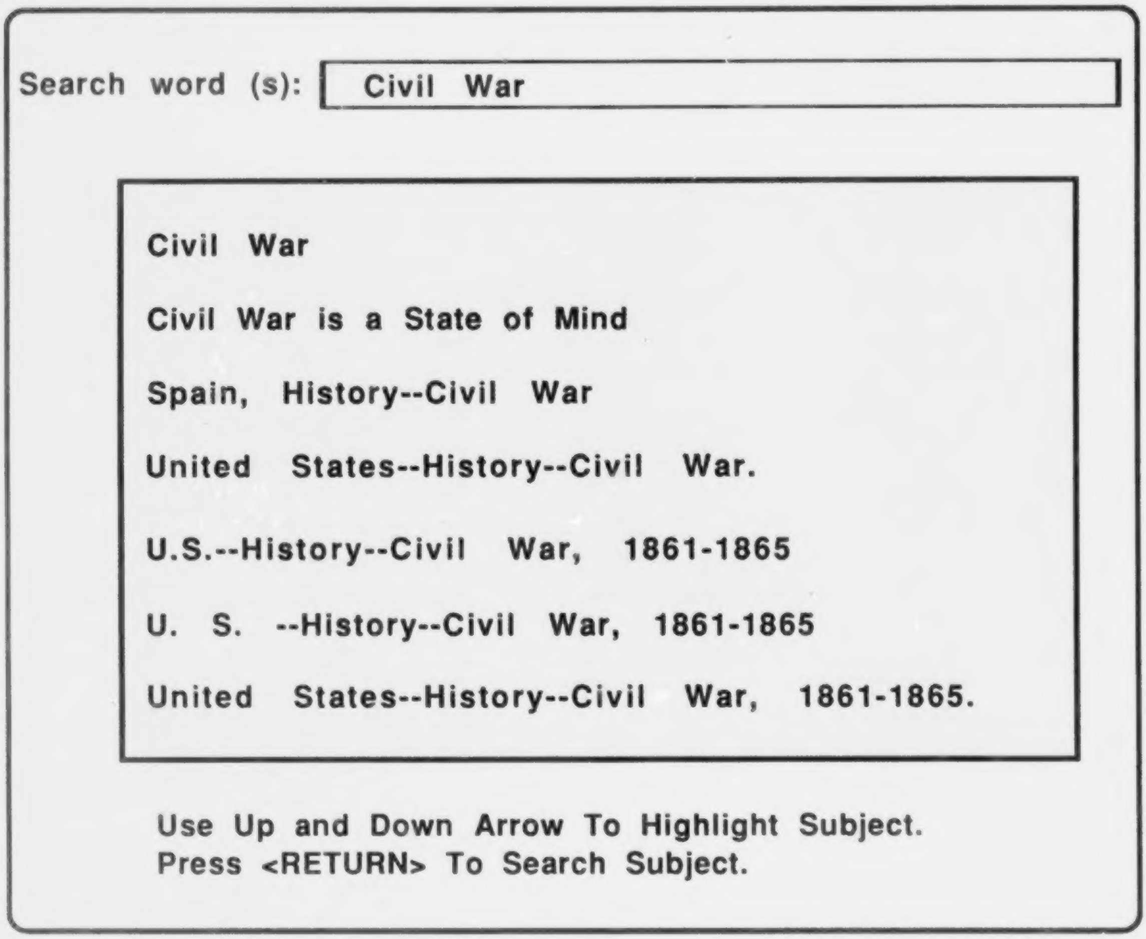
Civil War is a State of Mind

Let's Be Civil or We'll Go to War

Use Up and Down Arrow To Highlight Subject.
Press <RETURN> To Search Subject.

System should provide for keyword searching of at least the title but preferably the searching of more than one field to be defined by the library (for example, author, title, subject)

Searching by keyword retrieves records that have contain the requested keyword somewhere in the record itself. Depending on the system, a keyword search may only scan the title field in a record, or it may look throughout all fields for the terms noted. It is helpful to know how a keyword search will be conducted in the system you are examining. At times, you will retrieve records that do not seem to contain your search term at all because the brief record does not display them. However, if you knew that all fields were being searched, you would realize that the your keyword is actually contained in a differrent, non-displaying field.



Search word (s): Civil War

Civil War

Civil War is a State of Mind

Spain, History--Civil War

United States--History--Civil War.

U.S.--History--Civil War, 1861-1865

U. S. --History--Civil War, 1861-1865

United States--History--Civil War, 1861-1865.

Use Up and Down Arrow To Highlight Subject.
Press <RETURN> To Search Subject.

The library must be able to specify a ceiling of postings for any search expression without the need or intervention of a programmer.

Usually, it is helpful to be able to limit the number of "hits" that will be reported for any given search expression. This is to keep a search like "Texas" from generating an overwhelming number of hits. Patrons often find a search resulting in "too many" hits to be intimidating. With a reduced number of postings given, patrons will usually get to the correct area of the collection, even though they do not receive all listings. Many systems offer an alternative where the system informs the user that an excessive number of hits have been located, and asks the user to narrow or qualify their search. How many is "too many" or "excessive" is often left to local discretion and it is usually preferable that it be easy to change this ceiling depending on local circumstances.

Authorized operators must be able to override the posting ceiling block.

As soon as you determine a ceiling, someone will come in with a perfectly legitimate reason to want to see "everything" on a subject. So it is helpful to have the ability to override posting ceilings. Library staff may find that they want a bibliography of everything available in the library on a certain topic and if this number is greater than the posting limit. Without this facilityit is impossible unless the ceiling is changed everytime .

System should provide for proximity operators when searching the database.

If you would like the ability to specify search words within a certain proximity of each other, this facility is helpful. This is desirable when the search term is not always entered the same way or when you are interested in two separate terms appearing closely linked by some combination of articles or other words.

The library must be able to specify a ceiling of pages or records printed for any search session.

While many libraries opt for having printers attached to their public access catalog terminals, many also determine a ceiling of postings that can be printed out at one time in order to control massive printing sprees. If you have the OPAC's located near the reference or other staffed area, chances are good a staff member will hear the continuous printing and come over to check out the situation, however, if you locate terminals throughout the building, if you have a very small staff that will not be able to watch out for this and if you have a clientele that is likely to print off massive quantities of "hits", this could be a facility you are interested in.

As you can see from the examples above, the creation of a local functional expectations list is a customization process. You should not take "canned" lists and expect them to fit perfectly in your local situation. It takes time to determine your local needs, compare them to any sample list and edit the list appropriately. In addition, there are probably capabilities that are not noted in any one canned list that you would like for your situation. It is only by considering your local situation, reading any available articles on the subject of choosing or evaluating a local system and carefully editing any exisiting list that you can achieve a set of functional specifications that accurately reflect your local situation. The sample list for you to work with is in Appendix G.

Next, it would be helpful for you to carefully look over your completed list and rank each specification as "essential" (3), "desirable" (2) or "helpful but not necessary" (1). Essential functions would mean just that, and a system that could not perform these would not be considered to be an option. Ranking these functions and noting the ability of the systems to comply with them can help to make your ranking of system functionality more objective.

Formal Demonstrations:

Since you will be using this list during vendor demonstrations, you should create a "checklist" format that will allow you to make notes concerning system operation. You can either modify the list itself or use another form that you would work with together with the functional specifications (a sample of one such form is given in Appendix G). Once you have created your checklist, it is time for the "formal demonstration " process . Call vendors for onsite demonstrations at your library. If that is not possible, schedule meetings with different vendors at TLA or ALA. This would involve them showing the system to you alone for a certain period of time. You need a specialized demonstration to assure that you address all functional specifications you are interested in. They may ask to see your list of functional specifications and if they do, I would recommend sending to them. What you are looking for is not a secret, and if by knowing what you want ahead of time they do a better demonstration for you that illustrates your requirements, it will work out the benefit of both of you.

After you have seen demonstrations of the systems you are interested in, "score" the functionality of the systems to determine the ones that best meet your functional needs. This is where having ranked the different functional specifications becomes important. If you have already assigned rankings to the specifications, looking over the results at this time is much easier.

"Ballpark" Price Estimates:

If you have not done so before, after comparing your checklist against the vendor's system, ask for a price list for the system to determine if they are in the neighborhood of what you can afford to pay. Talk to the vendors about your budget and discuss an approximate costs for a system of the size you are interested in (which you know using your long range plan). However, I would not discuss specific prices at this time because it can put too much emphasis on that aspect of the procurement prematurely.. Don't worry, you'll have lots of time to think about price. It may be that you have already had to construct a budget estimate when you wrote your long range plan, in which case this step may not be necessary (depending on the vendor that you used for your estimate).

References:

Next, ask for names of references (present users of the system) from those vendors you are interested in. It is best to find references from libraries that are close to you in size and type. For example, if you are a director of a library of 30,000 titles, talking to the automation coordinator at the New York Public Library or Harvard may not be very helpful. It's not that you couldn't get some interesting information, it's just that the drastic difference in scope, size and type would lessen its applicability. The vendor may not have a site that is exactly like yours. At this point, it is up to you to decide if you are willing to risk being the first of your type or size. While the general rule of thumb is "never be first", sometimes certain situations give you reasons to change your mind. Looking at the vendor's track record with existing installations is a good indicator of how they will follow through for you. That , along with strigent contractual assurances, may be enough to make you feel comfortable being the first on the block to own one.

Next, construct a list of questions to ask these people about their system. This helps to standardize the information you get from everyone. Without such a list, your call could end up being one long discussion of how that library barcoded their collection. While this might be interesting information, it will probably not be very helpful at this point. First time system buyers are usually very interested in how a system works and the features it offers. However, take it from repeat purchasers: the most "feature-filled" system in the world is no good if it doesn't work. So look at functionality but ask everybody you can about the responsiveness of the vendor and the system reliability. Though there are probably many other questions you have, remember these as well:

--How knowledgeable are the vendor's personnel?

--Do they understand libraries?

--When you call for help, is it difficult to reach someone who can help you?

--How quickly are your problems normally resolved?

--Did the vendor accurately estimate the time spent in system implementation?

--How would you rate the documentation provided by the vendor?

--How would you rate the training offered by the vendor?

--How are problems resolved with the hardware?

--How are software problems resolved?

--Is there an active users group?

--Have you been down a lot since you've been online? Can you estimate time per month?

--If the system goes down through no fault of the library, what does the vendor do about it?

--Do you have a contract with the vendor?

--Do you have a maintenance agreement with the vendor?

Top Three Vendors:

Once you have looked carefully at the systems, and determined the "ballpark" prices of the system, determine the top three vendors. Do not rank these top three vendors as 1, 2, or 3 at this point; in fact, if you really like four vendors, you can specify those at this time. It will take a bit more time, but it is acceptable to keep the field larger if you prefer. You are basically trying to narrow the field for further study. You are not at the point of sending out a purchase order to vendor number 1.

Contract Clause Discussion:

If possible, you can discuss contract terms with the "short list" of vendors you have identified. I say "if possible" because some small systems are purchased without any contract at all. This discussion would include determining the willingness of the vendor to agree to a contract containing assurances you consider important. It would be useful to list out these items of importance and have the vendor reply in writing. If you do have a chance to lock the vendor into some basic items in the contract, it is recommended that you do so. If you determine that you will be able to negotiate a contract with your vendor, I would suggest that you look closely at Preparing Contracts and Negotiating with Library Automation Vendors by Bob Walton. Though the topic is dealt with much more completely in the publication mentioned, the following are some items to look for:

Functional Performance Examination
(Does the system do what they said it would?)

Reliability Examination
(Does the system go "down" often?)

Data Load Examination
(Can the system accept your records in the form they said it would?)

Full Load Response Time Examination
(Once everything is loaded, does the system respond as quickly as they said it would?)

Storage Capacity Examination
(Can the system they suggested you buy hold all the information you told them you had to load?)

Incorporation by Reference
(Include all functional specifications, information and assurances ever given by the vendor to the library in the contract and thereby make them binding.).

Listing of equipment, software, supplies and services.
(List out all of the above with associated prices)

Identification of parties to the agreement
(Specify name of your institution and the vendor)

Applicable and governing law
(Texas, the local state of the library, should be the governing law of the contract)

Shipping of Equipment
(In order to limit risk to library, vendor owns all equipment until installed)

Escrow of Library System Software
(Can you get to the source code if the vendor goes out of business?)

Computer Hardware Expansion Responsibility
(If the vendor has told you what hardware to purchase and after you do the hardware is not sufficient for what you told the vendor you'd need, the vendor should pay to upgrade the hardware so that it can do what they told you it would. You should acquire ownership of the equipment.)

Software Warranty
(The software will do what they said it would)

Final Acceptance of the System
(system will be finally accepted after all tests are passed)

Publicity
(The vendor cannot use your name in promotional material unless you give your express written consent).

In general, your aim in contract negotiation is to equalize the risk between you and the vendor as much as possible.

Specific Pricing:

Once you have discussed contractual issues, request specific price information from the vendor. This should detail the exact system you are interested in with any software modules you have decided upon.

Site Visits:

If possible, it is very helpful to see all "finalist" systems in operation. While this may take some travel, if you are able to find libraries nearby you to visit, you will find it extremely helpful. This is also a good time to talk directly to users and ask any questions you might have missed during the reference interviews. Also, take a look at any material the library might have developed to aid them in using the system. Was the documentation provided by the vendor so helpful that local user aids were unneccessary? How about the time required to "back-up" the system - how does it compare in reality to vendor estimates? What about ongoing expenses or charges that the vendor didn't mention?

Purchase system:

With the information you have gathered at this point, you know how the vendors stack up functionally (from demonstrations), in the areas of support , training (from references and contractual reservations), and price and in operation (from site visits). Now, you follow the requirements of your local institution to actually purchase the system. Some areas require an "Invitation to Bid" document while others will approve a simple purchase order. If you need to list specifications, you have the list of functional specifications and contract requirements that you have created. Or you can issue a purchase order for a system that fulfills your requirements for the least cost.

Following this procedure can give you the peace of mind that comes from knowing that you have done your best to acquire a system that meets your needs. Your work in the planning and procurement phase is over. Now all you have to do is get it to work. And that is covered in the "Implementation" phase of this manual.

WHY MARC FOR SMALL LIBRARIES?

WHY NOT KEYSTROKE?

1. MARC IMPORT/EXPORT PROTECTS DATABASE INVESTMENT BY ALLOWING PORTABILITY, AND IS NOW AVAILABLE ON MICROCOMPUTERS.

2. LOCAL LABOR COSTS ARE THE SAME FOR EITHER KEYSTROKING OR MARC DATABASE CREATION.

3. KEYSTROKING IS ERROR-PRONE. ERRORS CAUSE RECORD LOSS.

4. KEYSTROKING ERRORS CAN BE ELIMINATED BY MARC "COPY-CATALOGING."

5. THE EXTRA COST FOR DISK STORAGE IS SMALL.

6. THE COST DIFFERENCE BETWEEN KEYSTROKING AND MARC RESIDES IN THE METHOD OF OBTAINING THE MARC RECORDS THEMSELVES.

7. KEYSTROKING NOW AND CONVERTING TO MARC LATER CAN BE MORE EXPENSIVE.

Retrospective Bibliographic Conversion Methods

Online, Shared Cataloging Database

Install terminals to access bibliographic utility in an online, real-time situation.

Batch, Shared Cataloging Database

Use microcomputer to store unique numbers of the bibliographic records(LCCN, ISBN). Send to vendor to search database & create magnetic tape of holdings.

CD-ROM Cataloging Database

Use CD-ROM workstation to access MARC records on CD-ROM discs. Edit and store these on floppies or tape cartridges.

Contracted, Customized Conversion

Send Library shelflist to vendor for retrospective conversion. Original cataloging can be done on "no-hits".

Original Local Input

Use software to format a MARC record and input records locally. Or, use local system alone and add all records via the cataloging facility offered.

A combination of any of the above.

ITEM RECORD CREATION CONCERNS:

This is the process by which the individual library items, i. ,e., the copies of each title, are labeled and entered into the computer. You have essentially two choices:

1. **Label and Link ("Dumb" Labels)**

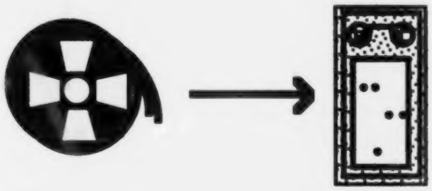
   Dumb labels are not associated with any particular library items and the staff must electronically link the label information to bibliographic information in the computer data base.

2. **"Intelligent" Labels.**

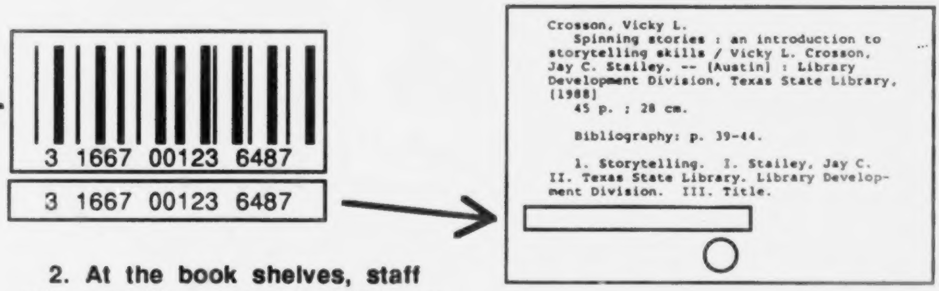
   Intelligent labels are item labels produced in shelf list order and already included on the bibliographic record tape or disks when the data is loaded into the system. The staff must affix these intelligent labels directly to the specific items for which they were produced.

law,JX 1971.6 .F28 1986 Reviving the World Court / 3 3254 00046 1487	law,JX 1971.6 .F57 1986 The law and procedure of the I 3 3254 00047 1288	law,JX 1971.6 .F84 The Future of the Internationa 3 3254 00013 0306
law,JX 1971.6 .H31 International Court of Justice 3 3254 00019 7073	law,JX 1971.6 .H8713 1984 Dissenting and separate opinio 3 3254 00040 5294	law,JX 1971.6 .L5 1951a The International Court of Jus 3 3254 00018 7298
law,JX 1971.6 .P7 The advisory jurisdiction of t 3 3254 00005 5503	law,JX 1971.6 .R6 The law and practice of the In 3 3254 00011 4706	law,JX 1971.6 .R6 1985 The law and practice of the In 3 3254 00045 1793
law,JX 1971.6 .R64 1963 C.2 The World Court : 3 3254 00012 8573	law,JX 1971.6 .R64 1973 The World court: 3 3254 00011 5059	law,JX 1971.6 .T45 1985 Non-appearance before the Inte 3 3254 00044 3303
law,JX 1974 .D6 Doc. disarm. 3 3254 00043 6042	law,JX 1974 .H44 Arms control and inspection in 3 3254 00009 0237	law,JX 1974 .H587 Arms control : 3 3254 00024 1103

Process I (Dumb Bar Codes), Option C: Labeling Materials and Shelf List, with Data Entry at Central Work Station



1. Library loads bibliographic data base into computer.

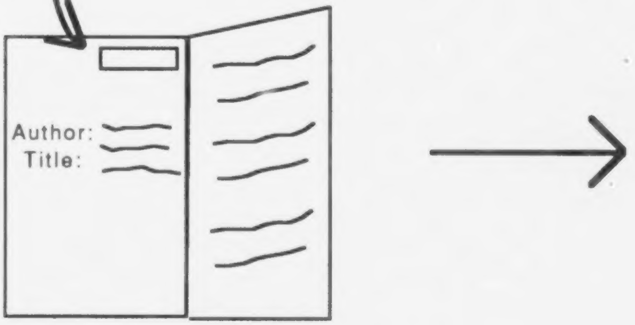


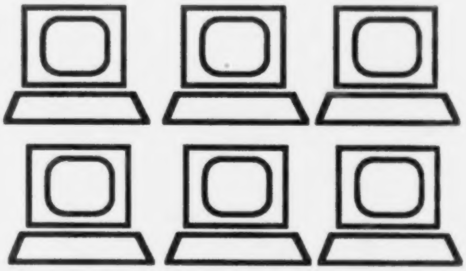
Crosson, Vicky L.
Spinning stories : an introduction to storytelling skills / Vicky L. Crosson, Jay C. Stailey. -- [Austin] : Library Development Division, Texas State Library, [1988]
45 p. ; 28 cm.

Bibliography: p. 39-44.

1. Storytelling. I. Stailey, Jay C. II. Texas State Library. Library Development Division. III. Title.

2. At the book shelves, staff affix machine readable labels to library materials, duplicate human readable label to corresponding shelf list cards.





3. Staff affixes bar code into proper location,book returned directly to shelf.

4. Staff enters data at special data entry station pool.

Process I (Dumb Labels)

Option C, Labeling Materials and the Shelf List, with Data Entry at Central Work Station

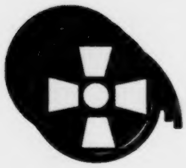
Advantages:

1. There are some savings in label costs.
2. There is greater control surrounding the start and finish of labeling particular sections of the library, and in handling the duplicate copies of titles.
3. The library avoids the extra work surrounding the creation of detailed functional and sorting specifications for intelligent label production.
4. The library avoids the physical labor of transferring the books to carts, moving them do a data entry area, moving them back to the shelves and reshelving.
5. There is greater administrative control with all of the data entry operators centrally located, and it is easier to design this type of work location.

Disadvantages:

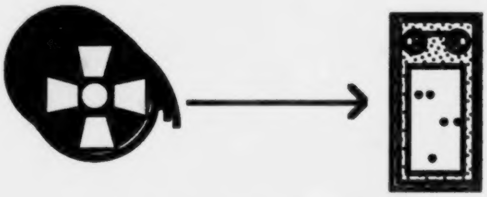
1. The library must link every item in the collection to the bibliographic data base. This is accomplished at a rate of approximately 40 items per hour, after they are labeled.
2. The overall library data entry rate is limited to the number of available data entry terminals and operators.
3. Data entry is done from shelf list cards, and not from the actual material, a less reliable method.
4. This conversion method assumes an extremely accurate shelf list.

Process II (Smart Bar Codes), Option A: Item Labels Created by Vendor

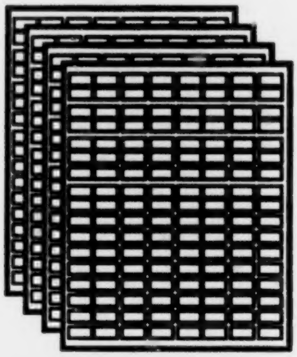


1. Library provides tape of its bibliographic records to automation system or data conversion vendor.

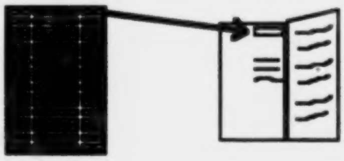
2. Library contracts with the vendor to create custom software program to insert copy information (e. g., label number, branch, statistical category, etc.) into its data base.



3. Library loads modified bibliographic data base into computer.



4. Library receives sheets of labels, arranged by branch, sub-sorted into shelf list order.



5. Library collection is labeled prior to circulating on line.

Process II (Intelligent Labels)

Option A, Creation of Intelligent Labels by Vendor Service Bureau

Advantages:

1. **The vendor usually has extensive experience in this process, and therefore is better able to create the detailed functional and sorting specifications for intelligent label production.**

2. **The vendor is responsible if any problems arise.**

3. **There is greater control surrounding the start and finish of labeling particular sections of the library, and in handling the duplicate copies of titles.**

4. **The library avoids the physical labor of transferring the books to carts, moving them do a data entry area, moving them back to the shelves and reshelving.**

5. **Most importantly, much of the time involved with the linking of items to titles is avoided.**

Disadvantages:

If your library elects to have intelligent labels, however, you must decide several issues:

1. **The labels must sort properly into shelf list order. If they do not do so, the labeling process becomes considerably more chaotic. This implies that the library must carefully consider its current and previous cataloging processes for issues like these:**

   Into which MARC fields did the library catalog insert its call numbers?

   Did the library consistently use the same cataloging methods to represent certain bibliographic groups? If there are great variances, it may be necessary for a separate computer program to standardize them. If you fail to do so, the system will sort the labels into different groups. Primary suspects for this include fiction (Fict., F, Fic, fic, etc.), juvenile books (J, Y, E, * etc.), biographies, and old cataloging that may lack Cutter numbering.

   How did the library represent the branch holdings in the 049 or 949 fields of the MARC records.

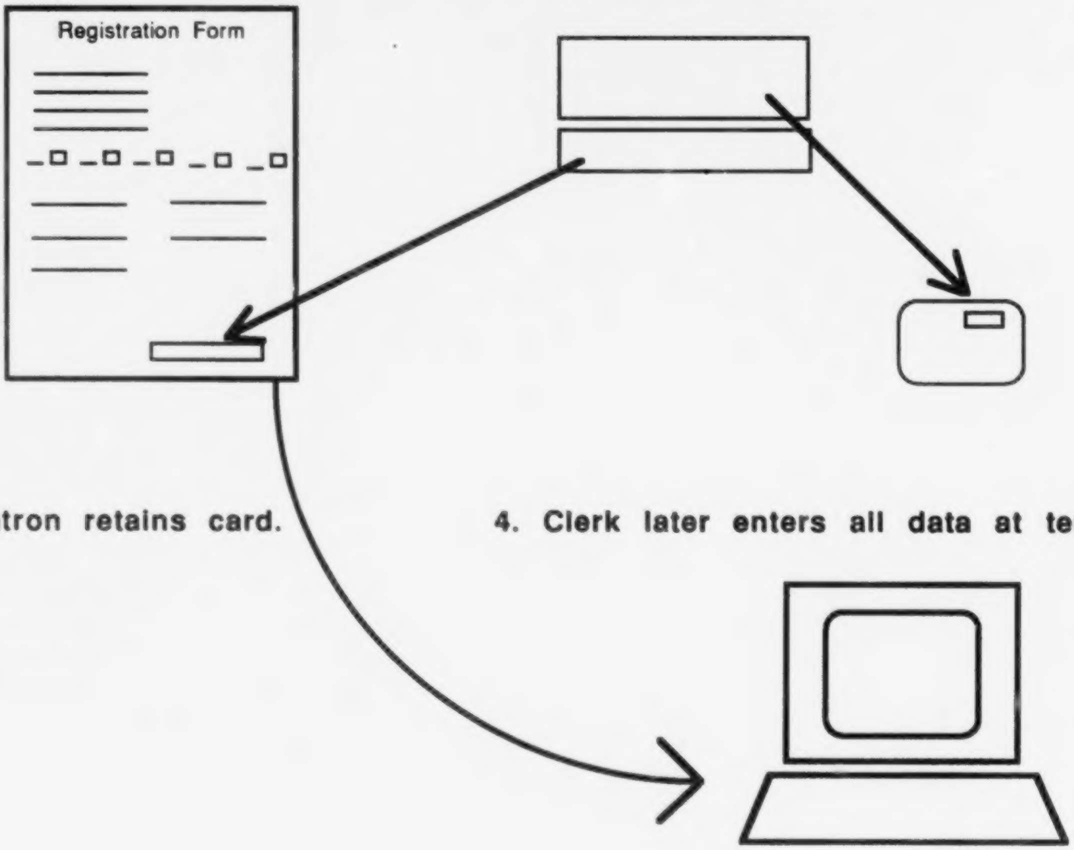
2. Through which algorithm does the library intend to produce the intelligent labels? Some libraries have sufficiently consistent cataloging and withdrawal procedures so that they can use the 049 and 949 fields to produce accurate copy data for all branches. Others decide to produce one copy of all titles for all branches. Others decide to use a large branch as representative of the remaining branches in order to create intelligent label sets.

3. How does the library want to represent the bibliographic data on the intelligent labels? Typically the information comes first from the branch, sub-sorted by collection, then by call number, and then by main entry, and then from the title and imprint information. Nevertheless, there are limits on the number of characters which can be printed onto an intelligent label, and the manner of display should be carefully considered.

4. How does the library plan to label and link the duplicate copies of its titles? Unless a retrospective conversion from the shelf list was performed in connection with an automation project, many libraries have not included copy information in a bibliographic utility data base.

Process I: Re-register All Patrons Upon Arrival at Library, With Direct Keying Of Patron Information

OPTION A, USING EXISTING LIBRARY CARDS



1. Patron completes new registration form, designed with help from system vendor.

2. Staff affixes double labels; barcode on patron card, human-readable label to registration form.

3. Patron retains card.

4. Clerk later enters all data at terminal.

PATRON RECORD CREATION CONCERNS:

PROCESS I: RE-REGISTER ALL PATRONS UPON ARRIVAL AT LIBRARY, WITH DIRECT KEYING OF PATRON INFORMATION

Option A, Using Existing Library Cards

ADVANTAGES:

1. Permits the use of the currently-used cards, without wasting the remaining supplies.

2. Allows the patrons to use the same library cards throughout the transition to the automated system.

3. Clearly indicates those patrons who have been re-registered; the label is already attached to the card.

4. Creates a methodology for collecting data, even before the system is installed. Spreads out the data entry task and avoids patron registration congestion at the time of system implementation.

5. Highest rate of data entry for manual methods; can be as high as 100 patrons per hour, depending upon which library automated system is chosen.

DISADVANTAGES:

1. The old cards are retained. Usually the newer ones are more modern and attractive.

2. Several months could elapse between re-registration and actual system implementation. Patron registration information could change.

WORKSITE CONFIGURATION SHEETS

These are three documents that you might find useful in setting up your library automated system. They are intended to be used in tandem, and we therefore suggest that you create one set of each of the three forms for each workstation location.

The first form is the **Worksite Task List.** You use this document to describe the types of activities you expect to perform at each location.

The second form is the **Worksite Equipment and Software List**. You use this document to list the computer equipment and programs needed to conduct the activities you described in the **Worksite Task List.** Each of these items has an associated cost, and by describing all of the necessary system components for each location, you will be able to compile the total costs for all of these components.

The third form is the **Worksite Preparation List**. You use this form to compile the list of activities and items needed to prepare the workstation location for Worksite Equipment and Software. You can then compile the total costs for these items just as you did for the equipment and software.

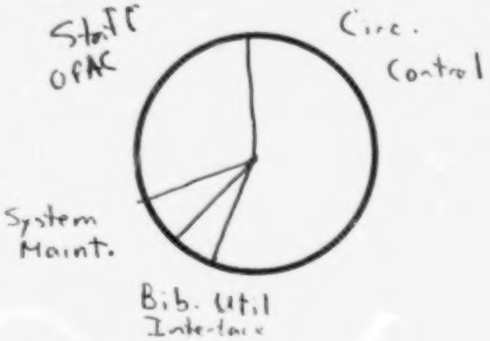
WORKSITE TASK LIST

Instructions for Use:
Begin by making about six copies of this first form, the **Worksite Task List.** Go through your library and decide where you would like to place the first workstation. While you are there, use the list below to describe the library activities that you would like to perform here. After you have done so, go on to the next proposed location, and repeat the process. By the time you finish going through your library, you will have an excellent idea of what types of tasks will be performed at every proposed location throughout your library. We suggest that you complete a series of this first form before you contact the vendors, because you will have a better idea of your automation needs. You help yourself by knowing this, because the vendor can provide more accurate pricing, and avoid over-configuring or under-configuring your system.

[✓ CPU]/STATION # 1

LOCATION: CIRC Desk, Left

USAGE ALLOCATION PIE CHART:



FUNCTIONS: (Mark All That Are Relevant)

X CIRCULATION CONTROL: (57%)

- X Charge/Renewal
- X Discharge
- X Patron Data Entry/Update
- X Title Data Entry/Update
- X Item Data Entry/Update
- X Fines/Payments
- X System Maintenence (1 hr./day -- = 8%)
- ___Holds/Reserves
- X Report Production
- X Patron Inquiry
- X Title Inquiry
- X Item Inquiry
- X Parameter File Maintenance
- ___Other___

X PUBLIC ACCESS CATALOG, STAFF USE (30%)

___PUBLIC ACCESS CATALOG, PUBLIC USE

X BIBLIOGRAPHIC UTILITY INTERFACE (5%)

WORKSITE EQUIPMENT AND SOFTWARE LIST

Instructions for Use:
After you have determined the number of workstations that you would like to have, make a copy of this form for each of the workstations you have allotted. Now, you can contact the vendors, knowing considerably more than the average prospective client. Tell the vendors the following information:

1. The total number of Circulation Workstations 2
2. The total number of Public Access Catalog Staff Use Workstations 1
3. The total number of Public Access Catalog Public Use Workstations 1
4. The total number of titles in your collection currently, and estimated total four years hence 20,000/25,000
5. The total number of items in your collection currently, and estimated total four years hence. 25,000/30,000
6. The total number of annual circulations currently, and estimated total four years hence 125,000/125,000

The vendor will begin to tell you about the equipment that you will need to have. In some cases the vendor can supply this equipment, and in other cases you may have to acquire it yourself. You can use the list below to indicate what is necessary for each site. You will probably find that many of the worksites are almost identical. This is not a problem; simply make multiple copies of the same site. After the vendor has indicated what you might need, you can use the list to question the vendor about adding any items that may have been omitted.

CPU/STATION # 1

LOCATION: Circ. Desk, Left

SOFTWARE: (Mark All That Are Relevant)

		Initial Price	Ongoing Cost
X Operating System; MS/DOS			
Version 3.1	___Purchase?___Incl?		
X Circulation Control	X Purchase?___Incl?	995	- 100
X Public Access Catalog	X Purchase?___Incl?	995	100
X Bibliographic Utility Interface (MARC input/output)	___Purchase? X Incl?	–	–
X Local Area Network (LAN)	___Purchase? X Incl?	–	–
___Other	___Purchase?___Incl?		
___Other	___Purchase?___Incl?		

WORKSITE EQUIPMENT AND SOFTWARE LIST, Page 2

CPU/STATION # 1

LOCATION: Circ Desk, Left

ATTACHED EQUIPMENT:

		Initial Price	Ongoing Cost
___ Terminal, Dumb, Type ___			
X Terminal, Intelligent (Microcomputer)			
Type IBM PC/AT Clone	X Purchase? ___ Incl?	2,500	150
X Random Access Memory (RAM),			
X [✓ KB]/MB	___ Purchase? X Incl?	—	
___ Additional RAM, ___ KB/MB	___ Purchase? ___ Incl?		
1 Disk Drive, Hard, 60 KB/[✓ MB]	X Purchase? ___ Incl?	700	
1 Disk Drive, 5.25 inch, 360 [✓ KB]/MB	___ Purchase? X Incl?	—	
___ Disk Drive, 5.25 inch ___ KB/MB	___ Purchase? ___ Incl?		
___ Disk Drive, 3.5 inch, ___ KB/MB	___ Purchase? ___ Incl?		
___ Disk Drive, 3.5 inch, ___ KB/MB	___ Purchase? ___ Incl?		
1 Back-Up Device/Tape Drive	X Purchase? ___ Incl?	500	
1 Light Wand/Label Reader	X Purchase? ___ Incl?	500	
1 Report Printer	X Purchase? ___ Incl?	1,100	
___ Slave Printer	___ Purchase? ___ Incl?		
1 LAN Card	X Purchase? ___ Incl?	700	
___ Port Board ___	___ Purchase? ___ Incl?		
___ MODEM, Auto-Answer, ___ bps	___ Purchase? ___ Incl?		
___ MODEM, Dial-Out, ___ bps	___ Purchase? ___ Incl?		
___ CD-ROM Drive(s)	___ Purchase? ___ Incl?		

WORKSITE PREPARATION LIST

Instructions for Use:
You will need one of these forms for each workstation location. This form is used to list the preparations that you must make to put each location in operating condition. The vendors may offer you some assistance in the types of items they recommend that you purchase for each location. Please carefully consider safety and security issues. Computers are very sensitive devices, and suffer badly if they are exposed to significant variations in electricity or environment. Cassette tape back-up devices, surge protectors or uninterruptable power supplies, and HALON fire extinguishers are excellent investments.

CPU/STATION # 1

LOCATION: Circ Desk, Left

	Quantity	Unit Price	Amount	Ongoing Costs
Electrical Circuits, 30 ~~20~~ AMP	1	$ 200	$ 200	65
Telephone Line, Analog				
Telephone Line, Digital				
Data Cabling	1	90	90	
Computer Table/Stand	1	100	100	
Printer Stand				
Surge Protector	1	60	60	
Uninterrupt. Pwr. Suppl	1	800	800	
Forms Burster				
Forms Decollator				
Fire Extinguisher, HALON	1	150	150	
Anti-Static Mat	1	75	75	
Supply Cabinet	1	150	150	
Other				
Other				
Other				
Other				
Other				
TOTALS			$1,625	65

WORKSITE TASK LIST

Instructions for Use:
Begin by making about six copies of this first form, the **Worksite Task List.** Go through your library and decide where you would like to place the first workstation. While you are there, use the list below to describe the library activities that you would like to perform here. After you have done so, go on to the next proposed location, and repeat the process. By the time you finish going through your library, you will have an excellent idea of what types of tasks will be performed at every proposed location throughout your library. We suggest that you complete a series of this first form before you contact the vendors, because you will have a better idea of your automation needs. You help yourself by knowing this, because the vendor can provide more accurate pricing, and avoid over-configuring or under-configuring your system.

CPU/STATION #3

LOCATION: Adult Catalog

USAGE ALLOCATION PIE CHART:

(100% Adult OPAC USE)

FUNCTIONS: (Mark All That Are Relevant)

___CIRCULATION CONTROL:

- ___Charge/Renewal
- ___Discharge
- ___Patron Data Entry/Update
- ___Title Data Entry/Update
- ___Item Data Entry/Update
- ___Fines/Payments
- ___System Maintenence
- ___Holds/Reserves
- ___Report Production
- ___Patron Inquiry
- ___Title Inquiry
- ___Item Inquiry
- ___Parameter File Maintenance
- ___Other___________________

___PUBLIC ACCESS CATALOG, STAFF USE

X PUBLIC ACCESS CATALOG, PUBLIC USE

___BIBLIOGRAPHIC UTILITY INTERFACE

WORKSITE TASK LIST

Instructions for Use:
Begin by making about six copies of this first form, the **Worksite Task List.** Go through your library and decide where you would like to place the first workstation. While you are there, use the list below to describe the library activities that you would like to perform here. After you have done so, go on to the next proposed location, and repeat the process. By the time you finish going through your library, you will have an excellent idea of what types of tasks will be performed at every proposed location throughout your library. We suggest that you complete a series of this first form before you contact the vendors, because you will have a better idea of your automation needs. You help yourself by knowing this, because the vendor can provide more accurate pricing, and avoid over-configuring or under-configuring your system.

CPU/STATION #___

LOCATION:___________________________________

USAGE ALLOCATION PIE CHART:

FUNCTIONS: (Mark All That Are Relevant)

___CIRCULATION CONTROL:
  ___Charge/Renewal
  ___Discharge
  ___Patron Data Entry/Update
  ___Title Data Entry/Update
  ___Item Data Entry/Update
  ___Fines/Payments
  ___System Maintenence
  ___Holds/Reserves
  ___Report Production
  ___Patron Inquiry
  ___Title Inquiry
  ___Item Inquiry
  ___Parameter File Maintenance
  ___Other__________________

___PUBLIC ACCESS CATALOG, STAFF USE

___PUBLIC ACCESS CATALOG, PUBLIC USE

___BIBLIOGRAPHIC UTILITY INTERFACE

WORKSITE EQUIPMENT AND SOFTWARE LIST

Instructions for Use:
After you have determined the number of workstations that you would like to have, make a copy of this form for each of the workstations you have allotted. Now, you can contact the vendors, knowing considerably more than the average prospective client. Tell the vendors the following information:

1. The total number of Circulation Workstations___________
2. The total number of Public Access Catalog Staff Use Workstations_________
3. The total number of Public Access Catalog Public Use Workstations_________
4. The total number of titles in your collection currently, and estimated total four years hence_______
5. The total number of items in your collection currently, and estimated total four years hence. _______
6. The total number of annual circulations currently, and estimated total four years hence_______

The vendor will begin to tell you about the equipment that you will need to have. In some cases the vendor can supply this equipment, and in other cases you may have to acquire it yourself. You can use the list below to indicate what is necessary for each site. You will probably find that many of the worksites are almost identical. This is not a problem; simply make multiple copies of the same site. After the vendor has indicated what you might need, you can use the list to question the vendor about adding any items that may have been omitted.

CPU/STATION #___

LOCATION:_________________________________

SOFTWARE: (Mark All That Are Relevant)

		Initial Price	Ongoing Cost
___Operating System; ___________			
Version____	___Purchase?___Incl?	_______	_______
___Circulation Control	___Purchase?___Incl?	_______	_______
___Public Access Catalog	___Purchase?___Incl?	_______	_______
___Bibliographic Utility Interface	___Purchase?___Incl?	_______	_______
___Local Area Network (LAN)	___Purchase?___Incl?	_______	_______
___Other__________________	___Purchase?___Incl?	_______	_______
___Other__________________	___Purchase?___Incl?	_______	_______

WORKSITE EQUIPMENT AND SOFTWARE LIST, Page 2

CPU/STATION #___

LOCATION:____

ATTACHED EQUIPMENT:

		Initial Price	Ongoing Cost
___Terminal, Dumb, Type_________			
___Terminal, Intelligent (Microcomputer) Type______________________	___Purchase?___Incl?	_______	_______
___Random Access Memory (RAM), ____KB/MB	___Purchase?___Incl?	_______	_______
___Additional RAM, ___KB/MB	___Purchase?___Incl?	_______	_______
___Disk Drive, Hard, ____KB/MB	___Purchase?___Incl?	_______	_______
___Disk Drive, 5.25 inch, ____KB/MB	___Purchase?___Incl?	_______	_______
___Disk Drive, 5.25 inch____KB/MB	___Purchase?___Incl?	_______	_______
___Disk Drive, 3.5 inch,____KB/MB	___Purchase?___Incl?	_______	_______
___Disk Drive, 3.5 inch, ___KB/MB	___Purchase?___Incl?	_______	_______
___Back-Up Device/Tape Drive	___Purchase?___Incl?	_______	_______
___Light Wand/Label Reader	___Purchase?___Incl?	_______	_______
___Report Printer	___Purchase?___Incl?	_______	_______
___Slave Printer	___Purchase?___Incl?	_______	_______
___LAN Card	___Purchase?___Incl?	_______	_______
___Port Board___	___Purchase?___Incl?	_______	_______
___MODEM, Auto-Answer, ____bps	___Purchase?___Incl?	_______	_______
___MODEM, Dial-Out, ____bps	___Purchase?___Incl?	_______	_______
___CD-ROM Drive(s)	___Purchase?___Incl?	_______	_______

WORKSITE PREPARATION LIST

Instructions for Use:
You will need one of these forms for each workstation location. This form is used to list the preparations that you must make to put each location in operating condition. The vendors may offer you some assistance in the types of items they recommend that you purchase for each location. Please carefully consider safety and security issues. Computers are very sensitive devices, and suffer badly if they are exposed to significant variations in electricity or environment. Cassette tape back-up devices, surge protectors or uninterruptable power supplies, and HALON fire extinguishers are excellent investments.

CPU/STATION #___

LOCATION:______________________________

	Quantity	Unit Price	Amount	Ongoing Costs
Electrical Circuits, 20 AMP				
Telephone Line, Analog				
Telephone Line, Digital				
Data Cabling				
Computer Table/Stand				
Printer Stand				
Surge Protector				
Uninterrupt. Pwr. Suppl				
Forms Burster				
Forms Decollator				
Fire Extinguisher, HALON				
Anti-Static Mat				
Supply Cabinet				
Other________				
Other________				
Other________				
Other________				
Other________				
TOTALS				

LIBRARY AUTOMATION SYSTEM COSTS

SAMPLE CONFIGURATION: #1

NUMBER OF WORKSTATIONS: 1
NUMBER OF TITLES: 5,000
NUMBER OF ITEMS: 6,000
NUMBER OF PATRONS: 4,000
NO. OF ANNUAL CIRCULATIONS: 60,000

CURRENT COSTS:	INITIAL	ONGOING/YR.
HARDWARE	$4,900	$200
SOFTWARE	1,195	$100
SITE PREPARATION	835	259
DATA CONVERSION		
--TITLES	1,500	90
--ITEMS	120	6
--PATRONS	1,500	150
STAFF PREP & TRAINING	$2,540	150
SUPPLIES		
LABELS, PATRON @$37/M	148	37
LABELS, ITEM, @ 27/M	(Incl. w/ item conv.)	
LABELS, SPINE, @ $30/M		60
LABELS, TITLE	(Incl. w/ spine labels)	
CASSETTES,DISKS, & RIBBONS	100	100
CARDS, BORROWER	1,000	100
NOTICES, PATRON	50	50
SYSTEM OPERATIONS (0.15 FTE @ $20,000)	$3,000	$3,000/YR.
TOTALS:	$16,888	$4,302

PREVIOUS COSTS, (ELIMINATED BY SYSTEM)	INITIAL	ONGOING
CIRC. FILE MAINTENANCE		$2,500
OVERDUES PRODUCTION		490
MONTHLY STATISTICS		480
INVENTORY REPORT		1,688
CATALOG CARD FILING		125
CATALOG CARD TYPING		625
CATALOG CARDS		30
ADMINSTRATION		2,000
TOTALS:		$7,938

ALTHOUGH OVER THE FOUR YEARS OF SYSTEM OPERATION THE LIBRARY WILL SAVE $14,544 IN ONGOING COSTS, THE INITIAL SYSTEM COSTS WERE $16,888, RESULTING IN AN EXTRA EXPENSE OF ABOUT $2,000. THIS IS THE REASON WHY IT IS UNWISE TO PROMOTE THE SYSTEM TO YOUR FUNDING AUTHORITIES BASED ON THE PREMISE THAT YOU WILL SAVE MONEY. YOU WILL NOT. AT BEST, YOU CAN EXPECT TO CONTAIN RISING COSTS. YOU MAY BE ABLE TO CONVINCE YOUR FUNDING AUTHORITIES OF THE VALUE OF THE SYSTEM BY EXPLAINING THE FOLLOWING BENEFITS, WHICH ARE DIFFICULT TO QUANTIFY, OR UNAVAILABLE WITH MANUAL SYSTEMS:

--COLLECTION USE STATISTICS
--PUBLIC RELATIONS--MORE STAFF AVAILABLE FOR PUBLIC SERVICE
--AUTOMATION APPEAL--(LIMITED FOR THIS CONFIGURATION--
CIRCULATION CONTROL NOT VERY POPULAR VS. OPAC)
--COLLECTION ACCESS--
SHELF STATUS FOR ALL MATERIALS PROVIDED DIRECTLY TO PATRONS, ELIMINATING SHELF UNNECESSARY SHELF SEARCHES

LIBRARY AUTOMATION SYSTEM COSTS

SAMPLE CONFIGURATION: #2

NUMBER OF WORKSTATIONS: 4 (2 Circ., 2 OPAC)
NUMBER OF TITLES: 20,000
NUMBER OF ITEMS: 25,000
NUMBER OF PATRONS: 10,000
NO. OF ANNUAL CIRCULATIONS: 125,000

OVERVIEW:

CURRENT COSTS:	INITIAL	ONGOING/YR.
HARDWARE	$13,750	$500
SOFTWARE	2,000	$200
SITE PREPARATION	3,290	259
DATA CONVERSION		
--TITLES	6,000	480
--ITEMS	3,000	304
--PATRONS	4,120	412
STAFF PREP & TRAINING	$6,160	420
SUPPLIES		
LABELS, PATRON @$37/M	(Incl. in patron conv.)	
LABELS, ITEM, @ 27/M	500	54
LABELS, SPINE, @ $30/M		60
LABELS, TITLE	(Incl. w/ spine labels)	
CASSETTES,DISKS, & RIBBONS	500	500
CARDS, BORROWER		(Included in patron conv.)
NOTICES, PATRON	1,350	720
SYSTEM OPERATIONS (0.25 FTE @ $20,000)	$5,000	$5,000/YR.
TOTALS:	$45,670	$8,909

PREVIOUS COSTS, (ELIMINATED BY SYSTEM)	INITIAL	ONGOING
CIRC. FILE MAINTENANCE		$5,208
OVERDUES PRODUCTION		1,255
MONTHLY STATISTICS		480
INVENTORY REPORT		4,050
CATALOG CARD FILING		420
CATALOG CARD TYPING		2,084
CATALOG CARDS		100
ADMINSTRATION		2,000
TOTALS:		$15,597

ALTHOUGH OVER THE FOUR YEARS OF SYSTEM OPERATION THE LIBRARY WILL SAVE $26,752 IN ONGOING COSTS, THE INITIAL SYSTEM COSTS WERE $46,040, RESULTING IN AN EXTRA EXPENSE OF APPROXIMATELY $20,000. THIS IS THE REASON WHY IT IS UNWISE TO PROMOTE THE SYSTEM TO YOUR FUNDING AUTHORITIES BASED ON THE PREMISE THAT YOU WILL SAVE MONEY. YOU WILL NOT. AT BEST, YOU CAN EXPECT TO CONTAIN RISING COSTS. YOU MAY BE ABLE TO CONVINCE YOUR FUNDING AUTHORITIES OF THE VALUE OF THE SYSTEM BY EXPLAINING THE FOLLOWING BENEFITS, WHICH ARE DIFFICULT TO QUANTIFY, OR UNAVAILABLE WITH MANUAL SYSTEMS:

--COLLECTION USE STATISTICS
--PUBLIC RELATIONS--MORE STAFF AVAILABLE FOR PUBLIC SERVICE
--AUTOMATION APPEAL--(VERY HIGH FOR THIS CONFIGURATION--YOU HAVE AN OPAC)
--COLLECTION ACCESS--
    SHELF STATUS FOR ALL MATERIALS PROVIDED DIRECTLY TO PATRONS, ELIMINATING SHELF UNNECESSARY SHELF SEARCHES
--COLLECTION ACCESS--
    INCREASED SEARCHING POWER AND FLEXIBILITY.

SAMPLE CONFIGURATION: #2

NUMBER OF WORKSTATIONS: 4 (2 Circ., 2 OPAC)
NUMBER OF TITLES: 20,000
NUMBER OF ITEMS: 25,000
NUMBER OF PATRONS: 10,000
NO. OF ANNUAL CIRCULATIONS: 125,000

COSTING DETAILS:

HARDWARE:

Main cpu: IBM PC AT compatible	$2,500
60 megabyte disk drive	600
report printer	1,100
cassette tape backup	500
LAN Board	700
Light wand	500
Total main cpu:	$5,900

Workstation: IBM PC Compatible	$1,000
20 megabyte disk drive	250
slave printer	500
LAN Board	700
Light wand	500
Total workstation	$2,950
(3 workstations, less two light wands)	$7,850

SITE PREPARATION:

Electrical Circuits, Dedicated, 30 amp, independently grounded, 4 @ $200	$800
Data Cabling, 5 @ 60 ft. avg. length	450
Surge protectors, 4 @ $60	240
UPS for main cpu	800
Fire extinguisher, HALON	150
Computer Tables 4 @ $100	400
Anti-Static Mats, 4 @ $75	300
1 Supply Cabinet	150
Total, Site Preparation	$3,290

For ongoing costs of power consumption, assume 300 watts per workstation, running 12 hours per day 300 days per year, at $0.06 per kilowatt hour, or $259 annually.

DATA CONVERSION--TITLES:

This library elected to use the library automation vendor to provide the bibliographic data conversion services. Their vendor agreed to provide a MARC record for every title in the shelf list at a cost of $0.30 per title, and provided a bar code for $0.02 extra (more under DATA CONVERSION--ITEMS, below). Therefore the initial title database conversion was $6,000.

The advantages of this approach were:

1. the library did not have to purchase any bibliographic data conversion equipment
2. they did not have to perform the data conversion themselves, and they received the database more quickly than doing it in house (30-35 titles per hour, if they did it themselves, provided they had the full-time staff).

The disadvantages of this approach were:

1. The library did not have any control over the project, and they had some varying degrees of accuracy with data input consistency.
2. The library had to pay more for the conversion than if they had done it in house.
3. Because the library elected to have this conversion done by an outside vendor, they never purchased the necessary equipment for the ongoing maintenance of the MARC-based bibliographic database. They therefore had to depend upon another vendor, a bibliographic utility to furnish this service. This vendor charged them $0.40 per record for all that could be located by LCCN/ISBN, and $0.80 for any that the vendor had to key in themselves. Since the library added 1,000 titles annually, and 20 percent could not be located by ISBN or LCCN, their annual ongoing title conversion costs were $480.

DATA CONVERSION--ITEMS:

The vendor provided the library item labels, with the item information already keyed into the data base at a cost of $0.02. For the 25,000 items in the initial shelf list, this cost was $500.

There are other costs for the item conversion include the affixing of the labels to the library materials. In teams of two people, a team can label 100 items per hour. Therefore, the initial collection labeling job took the library 500 person-hours to complete, and at a labor cost of $5.00 per hour, the total cost for the labeling was $2,500.

Therefore the cost of the initial item conversion was $3,000.

To calculate the annual ongoing item conversion costs, please consider this model. The bibliographic data entry was complete when the items were received, because the library obtained and loaded the MARC records in advance of receiving the items themselves. The library had an item data entry rate of 40 items per hour. Since the library added 2,000 items per year, this was 50 person hours @ $5.00 per hour, or $250

The library purchased higher-quality laminated book labels at a cost of $27 per thousand, so they paid $54 for the ongoing annual label costs.

Therefore the ongoing item conversion costs were $304.

The advantages and disadvantages. to this approach were similar to that of the bibliographic data entry input.

CARDS, BORROWER

The library elected to purchase brand new plastic library cards that resembled credit cards. They decided that the resemblance would cause their patrons to take their borrowing privileges more seriously, and they liked the good public relations effect of the attractively printed new cards. The staff chose thin stock so that the card could be placed in a typewriter in order to type the patron's name on the face of the card; patron signatures were often too difficult to read. They also decided to have two different types of cards--adult and juvenile. The juvenile cards had two signature lines--one for the parent and one for the child.

The initial patron database conversion costs were:

Library Cards, 10,000 @ $0.25;	$2,500
Labels, Double, 10,000 @ $37.00 per thousand;	370
Data Entry, 10,000 patrons @ 40 per hour @$5 per hour;	1,250
Therefore the total initial cost for the patron database:	$4,120

The library issued 1,000 new cards per year, and the same costs applied. Therefore the annual ongoing cost for the patron database was $412.

STAFF PREPARATION AND TRAINING:

The library knew that it had to train all of the staff in all of the functions of the automated system. The vendor would only be there for about 1/2 day for training purposes, much of which would be in daily maintenance routines. They also knew that the vendor could only train the primary staff, and there would be staff turnover, thereby requiring ongoing training duties. In addition, the library staff knew that the vendor's manuals would not be appropriate for their day-to-day operations because these documents provided all of the available options, even if they were not applicable to their own procedures. The library decided that they would have to write their own procedures manuals, and set aside training time for incoming staff. The new manual took six weeks for one person to write, and the staff training classes for all eight library staff lasted two working days. Then the staff had to practice on the system, and each member needed an average of one week just to become familiar with the system. Lastly, for ongoing training costs, the library averaged one new staff member each year, who had to receive two days of classes, and a week of practice. These costs are as follows:

Rewrite the procedures manual, 6 wks. @ $400 per wk.	$2,400
Training classes preparation, 1 wk @ $400 per week	400
Classes, 8 staff members, 2 days each at $60 per day	960
Practice, 8 staff members, 5 days each at $60 per day	2,400
Class, 1 new staff member/ yr.; 2 days @ $60 per day	120/ yr.
Practice, 1 new staff member/ yr., 5 days @ $60 per day	300/yr.

NOTICES, PATRON:

Our library decided that they would purchase data mailers for patron notice usage. These are forms that can go through the report printer and require no envelope stuffing, similar to auto registration renewal notices. These forms cost about $90 per thousand, and the library estimated that with a 3 percent overdue rate, and with about 300 holds per month their annual usage would be 7,350 forms. The library decided to purchase approximately a 2 year supply; therefore, the library bought 15,000 forms an the initial cost was $1,350, with about $720 in annual costs.

PREVIOUS COSTS (NOW ELIMINATED):

CIRC. FILE MAINTENANCE:

The library circulation clerk was able to file and unfile 4 cards per minute into the circulation files. With 125,000 circulations annually, this meant 250,000 filings at 240 per hour, and at $5.00 per hour this saved $5,208.

OVERDUES PRODUCTION:

The circulation clerk could type 20 notices per hour. Based on a 3 percent overdue rate, this meant that 3,750 notices were typed annually, and this required 187.5 hours. Each patron averaged 2 notices per envelope, so 1,875 envelopes were stuffed and stamped at 120 per hour, or 16 more hours. The total overdue processing was therefore 204 hours, or at $5.00 per hour the overdue production was $1,020 annually.

MONTHLY STATISTICS:

The monthly circulation statistics report required the librarian approximately 4 hours to compile, or 48 hours per year. At $400 per week ($10 per hour) this cost savings amounts to $480 per year.

INVENTORY REPORT:

The librarian and one clerk took one month to compile the inventory over the summer. At 170 hours for the librarian at $10 and $5 for the clerk, this cost savings is $4,050 per year.

CATALOG CARD FILING:

The librarian could file an average of 2 cards per minute. Since the library adds 1,000 titles per year, with an average of 5 cards per title, this was 5,000 cards. This amounts to 2,500 minutes, or approximately 42 hours per year. At $10 per hour, this was $420 annually that was eliminated.

CATALOG CARD TYPING:

The librarian did the cataloging, and typed the main entry catalog card, and it taking about 10 minutes to do so. Then the clerk photocopied the card, and typed the remaining added entry cards at 1 per minute. Since the library adds 1,000 titles per year, this was 10,000 minutes for the librarian, which is $1,667. The clerk spent about 5 minutes per set to reproduce and type, which is 5,000 minutes, or $417. Thus the library saved $2,084 annually in catalog card production.

CATALOG CARDS:

Five cards per title, times 1,000 titles per year, times $20 per thousand for catalog cards is $100 saved annually.

LIBRARY AUTOMATION SYSTEM COSTS

SAMPLE CONFIGURATION: #3

NUMBER OF WORKSTATIONS: 8
NUMBER OF TITLES: 40,000
NUMBER OF ITEMS: 45,000
NUMBER OF PATRONS: 18,000
NO. OF ANNUAL CIRCULATIONS: 200,000

OVERVIEW:

CURRENT COSTS:	INITIAL	ONGOING/YR.
HARDWARE	$30,655	$2,448
SOFTWARE	22,625	6,780
SITE PREPARATION	10,775	900
DATA CONVERSION		
--TITLES	36,000	4,500
--ITEMS	6,975	625
--PATRONS	5,000	250
STAFF PREP & TRAINING	$10,640	840
SUPPLIES		
LABELS, PATRON @$37/M	$666	$74
LABELS, ITEM, @ 27/M	500	135
LABELS, SPINE, @ $30/M		150
LABELS, TITLE	(incl. w/ spine labels)	
CASSETTES,DISKS, & RIBBONS	2,000	2,000
CARDS, BORROWER	4,500	500
NOTICES, PATRON	2,160	810
SYSTEM OPERATIONS (0.25 FTE @ $20,000)	$5,000	$5,000/YR.
TOTALS:	$137,496	$25,012

PREVIOUS COSTS, (ELIMINATED BY SYSTEM)	INITIAL	ONGOING
CIRC. FILE MAINTENANCE		$8,333
OVERDUES PRODUCTION		1,750
MONTHLY STATISTICS		480
INVENTORY REPORT		6,000
CATALOG CARD FILING		2,100
CATALOG CARD TYPING		10,420
CATALOG CARDS		500
ADMINSTRATION		2,000
TOTALS:		$29,693

ALTHOUGH OVER THE FIVE YEARS OF SYSTEM OPERATION THE LIBRARY WILL SAVE $23,405 IN ONGOING COSTS, THE INITIAL SYSTEM COSTS WERE $137,496, RESULTING IN AN EXTRA EXPENSE OF APPROXIMATELY $110,000. THIS IS THE REASON WHY IT IS UNWISE TO PROMOTE THE SYSTEM TO YOUR FUNDING AUTHORITIES BASED ON THE PREMISE THAT YOU WILL SAVE MONEY. YOU WILL NOT. AT BEST, YOU CAN EXPECT TO CONTAIN RISING COSTS. YOU MAY BE ABLE TO CONVINCE YOUR FUNDING AUTHORITIES OF THE VALUE OF THE SYSTEM BY EXPLAINING THE FOLLOWING BENEFITS, WHICH ARE DIFFICULT TO QUANTIFY, OR UNAVAILABLE WITH MANUAL SYSTEMS:

--COLLECTION USE STATISTICS
--PUBLIC RELATIONS--MORE STAFF AVAILABLE FOR PUBLIC SERVICE
--AUTOMATION APPEAL--(VERY HIGH FOR THIS CONFIGURATION--YOU HAVE AN OPAC)
--COLLECTION ACCESS--
    SHELF STATUS FOR ALL MATERIALS PROVIDED DIRECTLY TO PATRONS, ELIMINATING SHELF UNNECESSARY SHELF SEARCHES
--COLLECTION ACCESS--
    INCREASED SEARCHING POWER AND FLEXIBILITY.

Site Preparation Concerns

Site Preparation Specifications:

Typically these are supplied by vendor. If they are not, you have another area of potential difficulty with your vendor, as they can blame system problems on static electricity and substandard power.

Library Responsibility to Comply with These Specifications:

If the vendor does supply you with such specifications, please follow them carefully. This will not only help to assure proper system operation, but also will place you in a better position if there are unexplained problems with the system.

Vendor Responsibility Once the Library Does Comply with These Specifications.

Although this is not common with microcomputer system vendors, try to obtain written commitment from the vendor that if there are additional problems related to site preparation after you have complied, then the vendor will fix them at their expense. While you may not be able to obtain a written guarantee, at least you will have an understanding of the anticipated relationship that you will have with the vendor, and this sets up the proper business climate for you to request proper support. You may, during your evaluation process, discuss this matter with the prospective vendors, and seriously consider rejecting a vendor that seems uncooperative in this regard.

Specific Site Preparation Components:

Although not all of these are applicable to every work site, this is a list of the items that you may wish to consider for each workstation location. Please be sure to discuss these with your vendor, and with other libraries which have already been using the system, in order to determine which of these are appropriate for you.

1. Electrical Circuits, 20 AMP:

Microcomputers are finicky devices that generally prefer "clean" electrical power. This means that the electricity that supplies the workstation must be constant, not just that the power is present, but also that this power is unvarying in voltage levels and without electrical noise or interference. In order to accomplish this goal, the library typically would have an electrician install independently-grounded dedicated 110 volt electrical circuits, usually 20 amps, although 30 amp circuits are quite common. Your electrician knows exactly what these are. Because the installation costs vary greatly, even in the same locale, several estimates are advisable.

Independently-grounded means that the third wire in the outlet has its own, separate connection to the earth. A ground permits a place for unanticipated excess electricity to be bled away from the electrical components plugged into the electrical circuit, and thereby helps to protect the computer, and the computer operator. An independent ground isolates the computer from the excess electricity that might be bled away from other electrical equipment in the library, as typically they share a single ground wire.

We recommend that you have the vendor install four-plex outlets (i. e., four plugs) for these circuits, and give the cover plates distinctive colors. This helps remind people that these outlets are for computer use only, and we recommend you institute a strong library operational policy to this effect. By the way, some of the worst types of electrical trouble-makers for computers include any device that creates heat (space heaters, hair driers, etc.), radio wave emitters (security systems, microwave ovens), electrical motors (they emit radio noise), and photocopiers. Please carefully consider any plans to place such objects within a few feet of your microcomputer, and strongly advise against plugging such devices into the same electrical circuits.

2. Telephone Line, Analog; Telephone Line, Digital:

An analog telephone line permits the transmission of tones. This means that voice or data (via a MODEM) can be communicated. Analog lines come in two quality levels: voice grade and data grade lines, based on the level of static and noise that the line contains. A voice grade line is the typical telephone line that you purchase from the telephone company for conversations. These lines are of sufficient quality for short data transmissions, but sometimes their static can distort or corrupt the data. Data grade analog lines are not used for conversations at all; rather, they are dedicated and constantly connected for data communications.

You will probably want at least one analog voice grade line at at your main computer so that you can look at the screen and talk with patrons or your system vendor. You may also want another such line for dial-in access to your system. You will probably not use data grade lines unless you have a workstation in another building that you would want constantly connected to you main computer.

A digital telephone line is a special, high-quality line (99.5% uptime guaranteed, typically), but which cannot conduct tones or voice at all--only digital data. These are sometimes called DDS lines (for digital data service). These are suitable only for dedicated communication between digital devices like terminals and computers, and are used when data accuracy, communications speed, and reliability are needed. DDS lines are often more expensive than analog lines, but in larger cities often the opposite is true. Therefore, some libraries are beginning to purchase these.

3. Data Cabling:

Except for your main computer, all workstations will require that you install data cable that connects every workstation directly with the computer. Because the signal weakens with distance, the length of a connecting cable cannot exceed 700 feet. Typically the installers start at the workstation location with the spool of cable. Holding onto one end of the cable, they climb,crawl, and otherwise pull the cable off the spool as they work their way back to the main computer. This is why cable installation is called "pulling" cable. Because it is almost as easy for the installer to crawl back with more than one cable in hand, it is prudent to consider pulling additional cables, either for spares or for future growth.

The specifics of data cable installation can be complex. Please be sure that you follow the vendor site specifications, as well as local electrical codes. Pulling cable and electrical circuits is easier when the workstations are located adjacent to walls and columns. This is because the walls and columns serve as anchoring points along which to string wiring. Locations that are out in the middle of the room normally require floor ducts/conduit, or the installation of special power poles that provide a path from down from the ceiling so that you can run the data and power cable to those work locations. Your data cabling should not run through the same conduits or pathways with electrical wiring, as this will almost certainly cause interference on your data lines, and thereby corrupt your system.

Data cabling essentially has two types, although there are subgroups within each type. Please be sure to have the correct subgroup pulled. Type One is called twisted pair cabling, and is the same type that is often used for telephone lines. This cabling consists of wire pairs, usually four-wire, but often 6-wire to as high as 24-wire. This cable can be either shielded or unshielded. Shielded cable has a metal sheath surrounding all of the wire pairs, and this helps protect the data passing though the cable from interference. Type Two is coaxial cabling. This consists of wire wrapped by wire and sharing the same axis--hence the term "coaxial." The cable used for cable TV in your home is coaxial cable. This comes in several types; just be sure to follow your vendor's site preparation requirements.

4.Computer Table/Stand

Depending upon the location, you may wish to buy a special table or stand for your computer. These often are sturdier than typical furniture, and often have certain specialization for making computer equipment installation easier. These amenities include holes for data cabling and for locking/security equipment. You may carefully consider the size; depending upon the usage, you may want additional surface for books, writing pads, etc. Another consideration is the height of the table. For public access terminals, you might want to make these high enough to require that the patrons stand while using them. This encourages faster turnover, and this is helpful if you are limited in the number of workstations that you can afford. You may want to have seated workstation locations as well; however, if you have these, please be sure to purchase wooden chairs as they are less likely to build up static electricity charges.

5. Printer Stand:

This is an essential piece of furniture, specifically designed to enhance the flow of printer paper. Some printer stands are constructed with lockable bins for the printer paper supply, which is a nice security feature for public access catalog workstations. Some printer stands contain catch baskets which refold the printed output, making it easier to handle after printing. Some newer models even have a lockable bin to catch the output, which may be useful for sensitive reports like overdue notices.

6. Surge Protector:

This is a device which is plugged into the wall and into which you plug in the computer power cord. Some surge protectors have connectors for telephone lines also. Surge protectors have special circuitry which detects sudden increases in voltage and current (called surges and spikes, depending upon how quickly they occur). The circuitry is designed to disconnect the computer from the increase, and thereby help protect it from damage. Since surge protectors must react quickly and cut off high voltage, the better devices respond faster and cut off more excess voltage. Look for devices that respond within one nanosecond (one billionth of a second) and which allow 300 volts or lower to get through. Also, we recommend that you purchase surge protectors which have a power cord sticking out from the end, rather than those which are flat and designed to cover the existing electrical socket.

This is because some of the devices that cover the socket may not properly fit over that socket. This cause a loose connection, which can be disastrous.

7. Uninterruptable Power Supply (UPS):

This is a battery-backup device that detects a lowering of current (brown-out) or loss of current (black-out) and reacts quickly to increase the power to suitable levels. You plug the UPS into the proper electrical outlet, and then you plug the computer into the UPS. This helps avoid data loss and computer system damage from brown-outs and black-outs. The UPS also allows you the time to shut down your system in the normal manner, which also helps avoid system damage and data loss. In purchasing a UPS, you must consider the overall power consumption (in watts) of all of the devices you plug into it. Usually the UPS vendor can tell you how much time you have, based on the combined wattage of the connected devices, before the power in the batteries is exhausted.

8. Forms Burster:

This is a device that separates your computer output forms by bursting them at the perforations dividing them. This is a useful, time-saving tool, provided you have sufficient print-out volume.

9. Forms Decollator:

A device that trims off the tractor-feed stubs on computer output forms and then separates the multiple copies and the interleaved carbon paper. This is also a useful, time-saving tool, provided you have sufficient print-out volume.

10. Fire Extinguisher, HALON

HALON is a special chemical that can extinguish fires around computer equipment with minimum adverse effects on that equipment. You can purchase these for $60 to $200, and they are important to have, especially around the main computer.

11. Anti-Static Mat:

Static is one of the worst enemies of computers and disks. It corrupts data, and damages equipment. Anti-static mats installed on the floors adjacent to workstations can serve to help bleed off this static electricity from the operators before they touch the workstation or disks.

12. Supply Cabinet:

It is very convenient and prudent to have a lockable cabinet for computer supplies, like disks, cassette tapes, patron notices, ribbons, and report paper.

13. Other: (you may want to add other items that would be specific to your library)

TRAINING PACKAGES FOR LIBRARY AUTOMATION

√ Different Training Methods Work in Different Situations

√ The Choice of Method Depends Upon:

The Library Automation Enviroment

The Life/Work Experiences of the Trainees

The Advantages /Disadvantages of Each Method

The Library Automation Enviroment:

SYSTEM CHARACTERISTICS:

Large Data Files

Large Records

Complex Access to these Records

USER CHARACTERISTICS:

Diverse User Automation Experience and Expertise

Correspondingly Complex System Command Structure

Direct Public Contact With System

The Library Automation Enviroment:

BUSINESS ENVIRONMENT

Different from Other Library Training and Other Business Concerns

- √ Time and Space Constraints
- √ Adminstrative Pressures to Implement
- √ Training is Complex

The Life Experiences of Those Being Trained:

Unrealistic Expectations

Emotional Responses to Automation

Counter-Measures

Training Methods:

Concerns with All Methods

- √ Concentration, Tension, and Fatigue
    - Time limits, body rhythms
    - Variety and humor
    - Care in logistical planning
    - Job-related benefits
    - Basic knowledge needs
- √ The Audience to Be Trained
    - Training Priorities/Staff Selection

√ Training Content, Scheduling, Evaluation Feedback

Content Examples

Training Session Elements

Scheduling Impact on Library Operations

Evaluation Methods

THE PROPER TRAINING APPROACH FOR ADULTS: IT IS REALLY DIFFERENT...ISN'T IT?...

If one has been exposed to basic courses in education or educational psychology, one quickly hears that the training of adults is very different from that of children. There are many studies advocating this traditional "andragogist" theory. It states that adults are not dependent upon a trainer in the same way that children are dependent upon a teacher. Adults have had a lifetime of experience upon which to judge and relate to the material which is presented to them for learning. They are normally being trained for not only a grade or a degree, but also for self-development, problem-solving skills, or other more specific goals. The trainer of adults must therefore accommodate the knowledge already possessed by the trainees, and recognize that adult instruction must be much more participatory, relevant, and capable of additional control by the trainees themselves.

Before the development of andragogist theory, renowned psychologists like Carl Rogers advocated the principle that each adult learner had a responsibility for his/her own learning and the creation of the climate for encouraging it. John Dewey called this "learning by doing."

Lately, some of the andragogists have begun to suggest that this adult theory of learning might be extended to children, simply because they will eventually grow up and have their own problems to solve. This education approach would provide children with the framework for learning how to function in the adult world, and it would provide this education before all of the adult prejudices and experiences have had the chance to rigidify their thinking.

Taking this concept a bit further, Ashley Montagu, in his 1981 book Thinking Young, espoused the concept of neotany, or the retention of juvenile traits into adulthood. In short, he postulated that many desirable learning capabilities diminished with age. These included playfulness, imagination, honesty and trust, open-mindedness, and explorativeness. Jean Piaget also supported this concept, indicating that teaching methods played a very limited role in actual learning. The child is his/her own best teacher.

These education theories, then, can almost become contradictory. One says that adults need training based on the concept that they are more capable of independent thought and therefore require more latitude in determining how they will be trained. Another indicates that children are best able to determine their training methods because adults have lost learning flexibility. Nevertheless, one must consider that there is still a dependency relationship somewhere in the equation; perhaps it is in the transparencies that are used, or in the computer-aided instructional prompts that continually stroke the adult trainee with child-like phrases like, "very good, Jim Smith!"

Why is all this theory relevant to training packages for automated systems? The reason is that there is not yet a "unified theory" regarding the best method of adult education. In fact, there may never be agreement on how people actually learn. There are different methods which are equally effective for different learners and in different settings. The goal of this discussion is to show that:

1. the responsibility of the trainers in preparing their training packages for library automated systems is to know which methods work in a particular situation, and

2. the choice of educational method and content is best determined by an examination of the library automation environment, the life experience brought to the workplace by those who are being trained, and the advantages and disadvantages of the various training methods/packages at the trainer's disposal.

THE LIBRARY AUTOMATION ENVIRONMENT

Although this particular topic is a very broad one, there are three important areas that make library automation considerably different from other management, governmental, and institutional data processing environment. All of these factors have considerable impact upon the way that staff are taught.

First, typical library systems have very large files, very large records within them, and complex access to these records. This difference is nothing very new; libraries have been involved with the systematic science of information storage and retrieval long before computers were invented. All of the currently available paper tools illustrate the history of the development of the relevant system functional specifications: LC Cataloging, Dewey, Anglo-American Cataloging Rules, ALA Rules for Filing, etc. To illustrate the scale of library system complexity compared with other system types, one might consider a municipal utilities billing system. Its records have approximately 500 characters and four access points (customer name, account number, billing address, service address). This can be contrasted with an integrated library system. The typical disk space for a single MARC bibliographic record, including the indexing, often exceeds 8,000 characters of information, and with almost unlimited access points. Often there is key word access combined with Boolean operators across author, title, subject, series, and notes fields. This implies that the training for the optimal use of this system will be considerably longer, more complex, and will require extra time for staff to practice their searching skills.

Second, the library system user base incorporates an extremely wide latitude of automated systems familiarity. With most other governmentally-operated systems, there is an assumption of the eventual skill levels of the user based on the user's job description. In contrast, the library automated system will have direct public contact. This implies that the system must be more complex and flexible in order to adjust to the necessary user-defined skill levels, from a menu-driven approach up through a complex command-driven interface. The system must also be able to provide the appropriate context-sensitive help required to increase the operational skills of each user. Moreover, library staff must be able to provide the necessary help to the public, and this further complicates the training process. Not only are the staff expected to optimize their own use of the system, but also they will have to learn how to teach others with highly diverse skill levels to do the same.

Third, library computer use training is different from other kinds of library training. There are considerable time and space constraints. Sometimes administrators can be unrealistically optimistic concerning the amount of time required to train the staff in order to make the system operational, especially if they too heavily base their estimates on vendor optimism. Particularly at first, the staff must have adequate opportunity to learn the complex set of functional options afforded by an integrated library automated system, and how these capabilities fit into current and future library operations. This problem is further exacerbated due to location and scheduling difficulties provided by the computer itself. Sometimes it is difficult for a trainee to have convenient access to a terminal in order to practice as needed.

THE LIFE EXPERIENCES OF THOSE BEING TRAINED

Many people bring past experiences with computers, many of which are unrealistic. These can interfere with effective training, and therefore the trainer has to eliminate these perceptions. Some staff members believe that computers can be evil independently-willed entities capable of serious harm. Some think that computers are stupid devices that only do what they are told, and are therefore either capable of incredible mistakes, or are difficult to use. Others have been intimidated by the current rash of mass media advertising in which technical terms are deliberately tossed around without explanation. Conversely, some staff believe that the computer can solve all of their work-related problems.

Other people have very emotional responses to computers. Staff fear that they may look foolish if they make a mistake using one, especially when there are different levels of computer literacy among the staff. Many think that computers are very fragile and can be broken by a single incorrect keystroke. Others fear the computer's potential intrusion into society, or that the computer has been installed in order to eliminate their jobs.

Regardless of the actual training method, there are counter-measures against all of these problems. For example, the staff needs to recognize that the computer is merely a powerful tool which will help them to do their work better and more easily, eliminate some of their more labor-intensive tasks and thereby free them for more meaningful work, and provide to the library additional currently unavailable information which will improve library services. The system is designed to be able to anticipate some of their mistakes and to take corrective action. It is not fragile and the daily tasks that staff perform cannot cause the computer to break. The system is designed to allow users sufficient capability to accomplish their work, yet contains password security to assure that they cannot access functions that could inadvertently cause serious harm. The staff will be properly trained in the jobs that they will perform. They do not need to learn complex mathematical skills or learn to program, any more than they need to become an auto mechanic in order to drive their cars. Lastly, staff need not fear that the system will eliminate their jobs. The universal experience of libraries is that these systems do not save staff. Typically the computer creates new jobs, provides some level of cost containment, and causes some job reassignments. Lastly, they need the assurance that library systems have been successfully implemented elsewhere, and therefore the same will occur locally.

TRAINING METHODS

There are a number of concerns which apply to all training methods, and especially for computer system training. In order to achieve maximum effectiveness, these must all be accommodated.

1. Concentration, Tension, and Fatigue

Computer training is inherently tension-producing because it requires a high level of concentration. Ultimately, such tension is tiring and interferes with learning. It is therefore necessary to adjust for this fatigue.

There are limits to the amount of time that a student can concentrate, regardless of the interest level of the material. Many educators estimate that this is about one and one-half hours, under the best of circumstances. Certain times of the day can reduce this time limit. Morning is usually the best time, and right after lunch is generally the worst. Late in the day carries the disadvantage of mental distractions associated with unfinished daily business or the transition back to personal lives.

The instructor can reduce the tension by varying the training techniques, and by injecting humor or personal experience into the discussion. One must be careful not to over-utilize these methods, however. Too much variation can become distracting or confusing, and excessive use of humor or personal experience can waste valuable training time.

An additional tension producer is the logistical changes that might be required for the educational setting, especially when changing training methods. Rearranging the room, shifting furniture, and hardware problems detract from the learning experience. A better approach might be to have several pre-arranged settings, and to assure in advance that all hardware is operational.

It is helpful to bolster the trainees concerning the personal and job-related benefits associated with this training. These include not only the improved productivity, but also the new marketable skills that they will learn.

They will need some additional reassurance regarding the usual initial difficulties that they might encounter with basic information. It is very important for the trainer to communicate that there are no "stupid" questions, only stupid answers. It is necessary to encourage questions so that no one lacks the necessary information in order to proceed with the training. It would be helpful to reassure the trainees of the value of questions; chances are excellent that if a question arose in the mind of one trainee, it also occurred to others. By asking the question, all of the group gleans the benefit.

The trainer must recognize the ultimate limits on the amount of information that can be communicated within a given time limit. This is not always easy to do, and it requires constant observation of the audience in order to accomplish this. The trainer can demonstrate great sensitivity by calling a two-minute stretch break, even if it interrupts training.

2. The Audience to Be Trained

Everyone who has contact with the system will have to be trained, although the training would be appropriate to the each person's job responsibilities. This training would therefore include computer operations staff, librarians, para-professionals, clerical assistants, and administrative staff. Although all staff eventually must be trained, it is necessary to establish a training prioritization. Obviously the computer operations staff needs the first training. Thereafter, the library would have to decide which group will next be taught. This would clearly depend on the type of system installed, and the job duties of the staff members. For example, a larger library installing a circulation control system would also have a designated circulation department staff, and it would be better to train them first. In many academic libraries, however, the on-line public access catalog is often the first operational module, and the reference staff might be the priority group for training. Other libraries might decide that technical processing staff would be first.

3. Training Content, Scheduling, and Evaluation Feedback

Although this is attuned to the individual's job duties, and what the patrons might need to know to operate the system, there are a number of possible areas that the content might address:

--history and development of the system, both local library history, and that of the vendor
--terminal operation, function keys, editing keys, etc.
--overall system operation
--specific searching methods
--interpretation of system responses
--scope of the system database
--error reporting methodology

For each training session there should be the following elements:

--the session training objectives
--procedural instructions
--writing and note-taking space in all paper training materials
--self-test sessions

Especially at the beginning, the training plans must incorporate the considerable overhead of training all current library staff. The training staff must account for the number of hours, as well as limitations on training facilities in order to be able to prepare all of the staff adequately. Nevertheless, the trainers must also build into the training operations the necessary accommodation for the ongoing training overhead for new library staff.

It is also critical to have an adequate methodology for the evaluation of the training to see that it meets is objectives, and if the objectives themselves are appropriate. The evaluation techniques do not need to be extensive, but follow-up research is important to determine exactly how the training met the day-to-day interactions with the system.

FB17: SMLBS

ACCEPTANCE TESTING

1. HARDWARE QUALITY ACCEPTANCE TEST
2. DATABASE LOAD ACCEPTANCE TEST
3. FUNCTIONAL COMPETANCE ACCEPTANCE TEST
4. STORAGE CAPACITY ACCEPTANCE TEST
5. FULL-LOAD RESPONSE TIME ACCEPTANCE TEST
6. AVAILABILITY (UPTIME) ACCEPTANCE TEST

Appendix A

Glossary

APPENDIX A

GLOSSARY OF TERMS

Access Point

A defined pathway into a datafile used to retrieve information from that file. Typical access points to bibliographic files include "Author," "Title, "Subject," "Call Number," "International Standard Book Number, "etc.

Action Plan --See Strategies

Ampere (Amp)

A measure of electrical current per unit time, literally the number of actual electrons passing through an electrical circuit in a given amount of time. The amount of incurred amperage, not voltage, determines the extent of damage from exposure to electrical current.

Authorized Terminal Operator

An individual system user who has access to certain functions, as permitted by the security control component of that system.

BPS

Bits per second. This is the rate at which the data flows, or can flow, through a data communication medium, typically a MODEM or a telecommunications data line. MODEMS typically have bps rates of 300, 1200, 2400, 4800, 9600, 19,200, and 56,800. Data lines are usually quoted in terms of KBPS, or kilobits per second. This is merely the above-mentioned numbers divided by 1,000, i. e., 0.3 KBPS, 1.2 KBPS, 2.4 KBPS, 4.8 KBPS, 9.6 KBPS, 19.2 KBPS, 56.8 KBPS.

Back-up

1. Archival storage of the transactional files and system software. A "back-up" is normally done daily in a local system via a tape drive. While some systems offer a "floppy disk" backup, that is normally so time consuming that the expsense of a tape backup system is justified. Having a current back-up of your system stored in a safe place can save you numerous moments of desperation and nightmares. (Sometimes called "archival backup")

2. An alternative to the automated system. In many larger systems, libraries will purchase a microcomputer (normally referred to as "microcomputer back-up system") to handle circulation in the event of minicomputer failure. Materials are checked out using simplified system software and stored on the microcomputer; when the system is operational again, this information is transferred to the minicomputer. Also, some libraries purchase microform or CD-ROM catalogs for use when the system is down.

Barcode Reader --See Light Wand

Baud

The rate of discrete changes in a data signal. Formerly, one discrete change per second constituted both 1 baud and 1 bit per second, so that the baud rate and bps were the same quantity. Currently more than one bit per second can be contained in one baud, and the number of bits can vary. It is therefore incorrect to speak of the baud rate as the speed of data transfer, although "baud rate" and "bps" are currently used interchangably. The proper and unambiguous unit of expression is bps.

Bibliographic Record

All of the information contained in a title record or MARC record.

Bibliographic Utility

An institution providing bibliographic information for cataloging and other library operational uses. Also refers to the suppliers of such databases, as well as the databases themselves. Examples of bibliographic utilities include OCLC, RLIN, WLN, BiblioFile, and LaserQuest.

Bibliographic Utility Interface

A combination of hardware and software which provides data transmission between a bibliographic utility and the local library automated system. The bibliographic utility interface can include hardware e. g., microcomputers and cabling; and software e. g., computer programs which translate the data output from the transmitting system into a format usable in the receiving system

Binary

Information characterization communicated by one of two choices: yes or no; presence or absence, right or left, up or down.

Bit

Short for binary digit. This number is represented either as 0 or 1. Typically the smallest representation of binary digital information, consisting of either the presence or absence of an electrical signal.

Block

A system-generated prohibition against further processing of the current transaction. A patron block can result from an attempt to charge items to a patron who is delinquent. An item block can result from an attempt to charge an item to a patron who is unauthorized to borrow materials of that material type.

Bugs -- See Software Bugs

Byte

One character of information digitally represented. Usually one byte is represented by approximately 8 bits. See Bit, Kilobyte, Megabyte, Gigabyte, Terabyte, Petabyte.

CD-ROM

An abbreviation for Compact Disc--Read-Only Memory. This refers to a laser-readable disc data storage format 120 millimeters in diameter, 1.5 millimeters thick, and containing approximately 550 megabytes of information available to the user. The data is read-only, meaning that it cannot be overwritten. One typical application of CD-ROM is the storage of Library of Congress USMARC cataloging information, which is ultimately utilized by the local library for bibliographic data entry.

Checkin -- See Discharge

Checkout -- See Charge

Charge

A circulation control process by which an item is assigned to a patron for a specific time period. Normally the system status of the item becomes "charged," and includes the due date. This process is also known as "checkout."

Console

In a larger computer system this is the special communication device that the main computer recognizes as the master controller of the system. The console can be either a special printer that contains a keyboard, or it may be a simple computer terminal with a slave printer attached to log the commands that have been issued to the computer. Typically the console is always obeyed unless special software is in place to countermand this. In a microcomputer the keyboard is the console.

Daisy Wheel Printer

A type of printer that most closely resembles a typewriter. The letters are fully formed like the raised letters on a rubber stamp. They are located on the ends of long finger-like projections of the print head. Because the print head contains one or two letters on each projection, there are often more than forty such projections extending out radially from the print head like spokes on a wheel or flower petals. It is the resemblance of the print head to the daisy flower that gave the name to the printer type.

Data Cabling

The physical wires connecting different system components to each other. Typically data cabling comes in two basic types. The first type is co-axial; this means that the wires in the cable share a common axis. If you cut coaxial cable look directly at the end, the wires form a series of concentric circles along a single axis; hence, the name "co-axial." Typical use for coaxial cable is for simultaneous large amounts of data transmission where signal quality is extremely critical, like large computer data transmission, and television signals. Coaxial cable prevents "data leakage" though the sides of the cable. The other type is multipair cabling, consisting of pairs of simple wires. Cutting this cable and looking at the end will reveal a bundle of wire ends. This cable is typically used for voice grade or lower-speed data transmission telephone lines, and for single terminal communication with a computer.

Decision Table

A table listing all contingencies to be considered in the description of a problem, together with the corresponding actions to be taken.

Default

A pre-defined or standard value that the system enters into a data field when the user does not enter information. A typical default would be the system insertion of today's date during the checkin function.

Delinquency Threshold

A pre-assigned limit, if exceeded, will change the patron borrower status from "Unblocked" to "Blocked,"thereby prohibiting the patron from borrowing additional library materials. Library automated systems can have several different types of delinquency thresholds for each patron type: 1) the number of overdue items, 2) the number of charged items, 3) the number of items claimed returned, 4) the amount of fines owned, 5) the number of recalled items which the patron failed to return, 6) the value of overdue items, etc.

Discharge

A circulation control process that reverses the charge function. Typically the system compares the due date with the discharge date, and if the item is overdue, the associated fine is calculated and added the patron's account. If the item is not overdue, all links between the item and the patron who charged it are normally broken.

Disk Drive

A data storage device that contains a series of circular platters or disks which are coated with iron oxide. This coating can be magnetized, and data is written on the disks by magnetizing and de-magnetizing different locations on the disk. The data on a disk drive is more accessible than data on a tape drive. This is because in order to locate the data on tape, the tape must be read sequentially from beginning to the data location. The disk drive permits the immediate access of the data anywhere on the disk surface. Disk drives are available in two general technologies: floppy (which contain 8 inch, 5 1/4 inch, and 3 1/2 inch disks), and hard, which can contain several vertically-stacked platters. Typical 5 1/4 inch floppy disks have capacities of 360 kilobytes or 1.2 megabytes of information. Typical IBM 3 1/2 inch floppy disks have capacities of 720 kilobytes or 1.44 megabytes of information. Typical Macintosh 3 1/2 inch floppy disks have capacities of 800 kilobytes or 2 megabytes of information. Hard disks for current microcomputers are as small as 20 megabytes, and as large as 650 megabytes.

Dot Matrix Printer

A printer that constructs letters by aligning a series of dots. These dots are created by a series of vertically-aligned pins contained in the print head. These pins are carefully timed so that they strike the paper through the printer ribbon as the printer head crosses the page. Older dot matrix printers used only seven pins; they made rather crude letters without ascenders (e. g., the portions of the letters "b" or "d" that extend upwards) or descenders (e. g., the portions of the letters "y" or "j" that drop below the line). Typical dot matrix printers now have at least nine pins, although there are some that have as many as twenty-four. Usually the higher the number of pins, the higher the quality of printing.

Due Date

An assigned date and/or time for a specific item to be returned to the library, after which overdue fines may accrue to the patron. The due date can be assigned automatically by the system, although many systems permit the terminal operator to assign the due date manually.

False Hit

A record that appears to the computer to meet the search qualifications you have set up but which does not really reflect what you want. For example, you enter a search for "Wind" , thinking that you'll get some fairy tales about the North wind. You retrieve:

1. The Old North Wind

2. Violins and Other Wind Instruments

While #1 is just what you wanted, #2 is a "False hit" or "False drop" - a term that technically fulfills your requirements but is not what you wanted.

Fine

A monetary charge which accrues to a patron resulting from violation of library rules. The fine could be derived from a combination of patron borrower type, material type that the patron has borrowed, and the amount of time that this material is overdue. Fines can be assessed either automatically by the system, or manually by the terminal operator.

Fines

A circulation control process by which fines are either inserted into or removed from a patron record. Typically fines can be paid (either partially or fully for each item), or excused (also either partially or fully for each item). See also Payments.

Floppy Disk -- See Disk Drives

Flow Chart

A diagram that uses symbols and interconnecting lines to show the logic and sequence of specific program operations. The symbols are filled in with the task or product (depending on the symbol) and the lines indicate a flow of activity. The symbols are a diamond (decision indicator), a circle (a connector symbol that is a sign of continuation of the flowchart), a parallelogram (input/output symbol meaning the input to a certain procedure or output from it), a rectangle (a processing symbol to indicate that a process is being carried on at this point like a calculation or a checkout, etc.), an oval (a terminator symbol used to indicate the beginning or end of the flowchart) These can be very helpful in illustrating a process.

Functional Specifications

Detailed listing of the features and capabilities a local library is looking for in an automated system.

Gigabyte

1,024 megabytes of information, approximately one billion characters (1,073,741,824 bytes), often represented by the letters "GB" or "gb." Larger library systems can contain about 150,000 MARC records in one gigabyte of disk storage, or the entire text of a personal library collection of about 1,000 volumes. The sizes of larger magnetic data storage disk clusters are often represented in terms of gigabytes. See Kilobyte, Megabyte, Terabyte, Petabyte.

Goals

Long range, broad, general statements describing a desired condition or future toward which the library will work during the next 5 years.

HALON

A fire extinguisher chemical which can be safely used in the vicinity of computers. HALON leaves a relatively minor residue, compared with carbon dioxide, other dry chemicals, or water (NEVER USE WATER AROUND ANY ELECTRICAL EQUIPMENT FIRES, UNLESS YOU HAVE A DEATH WISH).

Hard Disk -- See Disk Drive

Hit

A record that meets the qualifications specified in a search. For example, a subject search for "Texas" would probably result in a large number of books being found. You would therefore have a large number of "hits".

Holds

The process by which a authorized terminal operator or patron may place a message in the system to indicate that upon discharge (or charge), a charged item is to be set aside for that patron. This is essentially a item block. Typically the holds function permits different types of messages which may activate this block, 1) item-specific--only that particular uniquely identified item alerts the terminal operator; 2) title-specific--any copy of that particular title alerts the terminal operator; 3) location-specific--any copy of that particular title belonging to the discharge location alerts the terminal operator. Typically a hold transaction includes a pick-up point and an expiration date.

Implementation

That section of the automation project process that includes site preparation, patron registration, barcode labelling, system installation, etc. Basically, everything you have to do after you buy the system until it is up and functioning.

Interface

The media and means through which disparate systems communicate. Two systems which have a tape interface imply that that data on System A's tape output can be loaded directly to System B. Other interfaces include direct (i. e., a physical cable), and visual (usually refers to the interaction between the human terminal operator and the system).

Invitation to Bid (ITB)

A document issued to vendors that outlines the local automation project and lists all requirements of a local system. Vendors respond with a firm bid addressing the issues specified. In most cases, if all the stated requirements are not met, the bid is "thrown out". Compare with Request for Proposals.

Item

A unique piece of library material as identified to the system, usually by a bar code number. Whereas the bibliographic information is often called a "title," each copy of that title is an "item."

Item Data Entry/Update

The furnishing of information about specific pieces of the library collection to the library automated system. Depending upon the individual system, this information may be keystroked, it may be entered via disk or tape, or it may be directly loaded via cable from a bibliographic utility. Item data update is the modification or expansion of pre-existing information in the library automated system. Typical item-specific information includes: 1) its unique system identification number, 2) owning location, 3) temporary circulating location, 4) media code/material type, 5) fine accrual rate, 6) non-circulating indicator (Reference Only), 7) statistical count category, etc.

Item Inquiry

The process of requesting and receiving information regarding a specific piece in the database, via any of the allowable access points. Typical access points include combinations, either partial or full, of the following: call number, unique system identification number, owning location, temporary circulating location, media code/material type, fine accrual rate, non-circulating indicator (Reference Only), and statistical count category.

Kilobyte

1,024 bytes of information, often represented by the letter "K." This is the amount of data on one typewritten page. The sizes of random access memory (RAM), and small magnetic data storage disks are often represented in terms of

K. For example a 640K RAM can hold 640 kilobytes (655,360) bytes of information. See Megabyte, Gigabyte, Terabyte, Petabyte.

LAN--See Local Area Network

Laser Printer

A new printer technology that uses a laser to scan and position the individual dots on the printed page. The location of the printed dots is very finely defined, often 300 dots per inch or more. The output from a laser printer is therefore of a very high quality. The type on this page was originally produced by a laser printer. The mechanism that actually produces the printed output is similar to a photocopier and therefore the output of the printed pages can be quite swift, 10 pages per minute or more.

Laser Scanner

A device whose function is similar to a light wand; however, instead of stroking, the laser performs the lateral movement across the machine-readable label. The major advantages to the laser are that the laser scans very rapidly, often 100 times per second. This rapidly repeating scanning results in almost instantaneously successful label reads, whereas the operator must manually re-scan with a light wand. The second advantage to the laser is, unlike the light wand, there is physical contact between the scanner and the label. This greatly extends label life, and can permit the library to use unlaminated labels, which are less expensive.

Light Wand

A pencil-like or pistol-like hand-held device utilized for reading machine-readable labels into a computer system, by stroking the device across these labels. The light wand may be either directly attached to the terminal or microcomputer, or may be installed on a data recording device whose information can be later interfaced to the computer system. (Also called light pen or barcode reader)

Local Area Network (LAN)

A set of automation components, usually workstation computers, larger file server computers, and printers, which are electronically connected to each other by a special wiring, circuit boards, and software. These components are not usually connected to the telephone company, although the data may pass through the building through the same internal cabling that connects the telephone instruments. Examples of LAN's include IBM Token Ring, DecNET, 3-COM, Appletalk, and Novell.

Long Range Plan

A document that identifies a long term (normally at least five-year) course of action aimed to effectively produce desired results. In the case of a long range automation plan, a library seeks to identify their needs and determined solutions for the next five years.

MARC--See USMARC.

MUX: See Multiplexor

Material Type

In a bibliographic record, this is sometimes known as the media code or material format. USMARC has defined 8 media formats: monographs, serials, musical scores, sound recordings, archival records, A/V Media, and machine-readable data files. In an automated library system, the material type may determine the length of time that it may be borrowed.

Megabyte

1,024 kilobytes of information, approximately one million characters (1,048,576 bytes). This is the amount of data stored on one thousand typewritten pages, or a decent-sized novel. In a small library system one megabyte of disk storage could contain approximately 500 MARC records. The term is often represented by the letters "MB" or "mb." The sizes of random access memory (RAM), and larger magnetic data storage disks are often represented in terms of megabytes. See Kilobyte, Gigabyte, Terabyte, Petabyte.

Milestone

A major task on the library automation timeline which has the effect of delaying all other activities until it is completed. For example, if the site is not prepared in time, no installation of equipment can take place which means records cannot be loaded or indexed and training cannot effectively take place or patron information cannot be entered.

Mission Statement

A concise expression of the library's purpose that specifies the fundamental reasons for the library's existence.

MODEM, Auto-Answer

A device which permits a digital device, like a computer or terminal to communicate with another digital device via an analog medium, typically an analog telephone line. MODEM is an acronym for a Modulator/Demodulator, because the digital signal must be modulated into an analog signal before transmission via the analog medium, and must be demodulated into a digital signal again before it can be understood by the receiving device. For this reason, MODEMS must operate in pairs. An auto-answer MODEM is typically installed in front of a receiving device, such as a computer. The auto-answer MODEM is capable of turning itself on to answer an incoming request to communicate with that receiving device, and adjust its data communication speed to match that of the incoming device.

MODEM, Dial-Out

A device which permits a digital device, like a computer or terminal to communicate with another digital device via an analog medium, typically an analog telephone line. This is sometimes called an auto-dial MODEM. The word MODEM is an acronym for a Modulator/Demodulator, because the digital signal must be modulated into an analog signal before transmission via the analog medium, and must be demodulated into a digital signal again before it can be understood by the receiving device. For this reason, MODEMS must operate in pairs. A dial-out MODEM is typically capable of connecting itself to an outgoing analog telephone line, and dialing into a designated auto-answer MODEM.

Multiplexor

Also known as a MUX. A device which permits the attachment of multiple data devices (like a terminal or printer) and permits simultaneous data communication for all of them over a single data communication line. MUXES are usually described in terms of "channels" or "ports." The number of channels indicates the number of devices that can be attached to the MUX, and therefore a 10-channel multiplexor can permit up to 10 devices to talk simultaneously on the telephone line. The advantage of using a multiplexor instead of a simple MODEM, is that the MUX reduces telecommunication costs, as you would need a telephone line for every single device if you just used a MODEM. Multiplexors cost more money, but they pay for themselves in telecommunications cost savings. The disadvantage is that when the telephone line fails, then all devices attached to the MUX are no longer functional.

There are two different kinds of MUXES, and they differ in the way they fool the telephone line into thinking that only one device is attached. The first type is a statistical multiplexor, or STATMUX, which statistically measures the data transmission levels for all attached devices, and constantly responds accordingly to each. In a 10-channel STATMUX, if Channel 4 needs to communicate 30 percent of the data, it is able to do so, with the other channels temporarily receiving reduced data transmission capability. Thus, the STATMUX can allocate its transmission resources among the attached devices in order to maximize the overall rate of data communication over the single telephone line. This capability does not apply to the second type of MUX--the time-division multiplexor. This device divides its transmission capabilities into equal slices of time among all of the attached devices. For example, with a 10-channel time division multiplexor, each attached device must wait for its channel's turn to transmit, and even then each device can only transmit data for 10 percent of the time. Obviously, when a device has more data to transmit than its allotted 10 percent time division, it cannot, even if the other devices have no data to transmit. Time division MUXES are generally less expensive than statistical MUXES.

Multi-User System

A term that normally refers to a computer system that uses terminals rather than microcomputers as workstations connected to a larger computer, usually a super-microcomputer, minicomputer or mainframe computer. Compare this to a local area network.

Needs Assessment

The identification of the problems and possible solutions to situations encountered in the library. This term is also sometimes referred to as a "needs analysis" and can incorporate functional specifications.

Objectives

Short range descriptions of results to be achieved in a specific time period. Objectives should be measurable, doable and time limited.

Online Public Access Catalog (OPAC)

A computerized card catalog with many additional features. This module of library automation software is normally referred to as an OPAC.

Operating System

The basic house-keeping software for a computer system. Typical functions of an operating system include the listing and control of the system components and their characteristics (printers, disks, keyboards, monitor screens), file allocation and storage location on the magnetic disks, and RAM allocation.

Parameter File

The listing of the major decisions in the library automated system. Typical parameter file entries include patron delinquency thresholds, patron borrower types, item statistical categories, timing of overdue notices and other reports, database access points, limits on system use for all authorized terminal operators, default fields, report formats, etc.

Patron

A library user. A patron may be or may not be registered. If a patron is registered in an automated library system,s/he has been assigned a borrower number, and ultimately must have all necessary personal information entered into the system.

Patron Borrower Status

A library automated system designator which indicates whether a patron may borrow library materials, usually "Blocked" or "Unblocked." The patron borrower status normally is independent of the materials that the patron would like to charge. Typically a patron is blocked because of the following reasons: 1) patron has exceeded a delinquency threshold, the patron's library card has expired, 3) the patron is unknown to the system.

Patron Borrower Type

A characteristic of a patron, as defined in the library automated system. There are usually two kinds of patron characteristics. The first relates to borrowing privileges, e. g., patrons of borrower type A (Adult Resident) may borrow hardback best sellers for 14 days. The second characteristic relates to statistical counts, e. g., how many circulations went to borrower type B (Children Residents). In some systems the patron borrower types apply to both borrowing privileges and to statistical counts; in other systems these are separate.

Patron Data Entry/Update

The furnishing of information about patrons to the library automated system. Depending upon the individual system, this information may be keystroked, or it may be entered via disk or tape. Patron data can include such elements as name, mailing address, residence address, borrower status status, patron borrower type, patron identification number, card expiration date, etc. Patron data update is the modification or expansion of pre-existing patron information in the library automated system.

Patron Inquiry

The process of requesting and receiving information regarding a patron in the database, via any of the allowable access points. Typical access points include the patron name (either partial or full), unique patron identifier (usually a label number), or alternate identifier (sometimes a social security number or student ID number).

Payments

A circulation control process which removes fines from a patron record by recording payment of money to the library. This is usually a manual process performed by a terminal operator.

Petabyte

1,024 terabytes, or approximately one quadrillion characters, or the number "one" followed by 15 zeros. The data storage capacity of 1.8 million CD-ROM discs, or on a stack of typewritten pages 63,000 miles tall. Rarely used. See Kilobyte, Megabyte, Gigabyte, Terabyte.

Port

An electronic connection to a piece of data processing equipment. The term could refer to the actual physical connector plug, as well as the access to the system as a whole. Computers and multiplexors are two of many devices that contain ports.

Port Board

A circuit board that contains the actual physical plugs for the connection of other data processing devices. Sometimes port boards are called port expansion units, and these components typically contain anywhere from 8 to 32 ports.

Procurement

For the purposes of this workshop, the section of the automation process that consists of examining and purchasing the automated system.

RAM--See Random Access Memory

Random Access Memory

An area of a computer that holds data that it needs for immediate use. The computer can access this data more quickly than data stored on the disk drive, but the data on the drive is more permanent, or non-volatile. While the data is present in RAM, it is volatile. This means that if the electricity is disconnected from the RAM, the data will immediately disappear.

Report

A compilation and output of data from a computer. Typically reports are produced on paper, and have therefore been output to the printer port. Sometimes, if the report is very short, it may be output to a terminal screen or the computer console. Reports can be either pre-formatted or custom-designed. A pre-formatted report is one that is either provided to you by the system vendor, or one you have already designed and stored for later use. A report may be user-defined, meaning that you can design it yourself to extract the particular data that you want from the system and arrange it in the manner that you choose. Some systems have the ability for user-defined reports, and others provide only pre-formatted reports. Typical reports include circulation statistics, patron notices, and computer diagnostics.

Report Printer

A heavier-duty printer attached to a microcomputer, or more typically to a minicomputer, and used for routine report and notice production, and catalog card printing. Libraries considering the use of a printer for catalog card production should consider bottom-feed printers (which feed forms in a straight line, rather than back-feed printers, which cause the forms to pass along a curved path. Straight-line feeding printers usually function more reliably with card stock.

Request for Information (RFI)

A document sent to automation vendors that outlines the envisioned automation project, describes the local library and certain issues of local importance and requests an estimated budget for an automated system for the local library. Budgets given in response to an RFI are normally not binding and are to be used for budgetary purposes only.

Request for Proposals (RFP)

A document that outlines the local automation project, describes the local library and addresses all issues of local importance including contract requirements, functional specifications, hardware requirements, maintenance, support , training, etc. This is sent to the vendor and a binding proposal is returned. Though many options and specifications are requested, a proposal is normally not "thrown out" if a system cannot meet all of them as all responses are not required to meet all specifications.

Reserves: See Holds

Response Time

The time it takes a computer system to react to a given input. It is normally measured to be the time between the touching of the "enter" or "return" key to the appearance of the first character of substantive data on the terminal screen. (i.e., a "wait" message would not be substantive, the title of your first retrieved search record would)

Screen Printer

Usually the equivalent of a Slave Printer - see definition.

Search Strategy

The search command types available to a system user. Also, a listing of the search commands used by a terminal operator. Examples of search strategies include: Boolean search command, keyword search command, and "'Author' = 'Twain.'"

Shared System

A computer system that is situated in one library and used by a remote location as well normally via telephone lines. The information of the holdings of all libraries sharing the system are entered onto the main database, however each library may have the opportunity to set some local parameters to customize their system.

Short List

Term used to refer to a subset of the universe of vendors. When you have looked at the field of vendors and narrowed down your choice to 3 or 4, that 3 or 4 are said to be on a "short list". They have cleared the first cut and are in a position of serious consideration by the potential customer.

Slave Printer

A light-duty printer attached to a terminal or microcomputer, installed for the purpose of reproducing the information on the screen. Typical usage includes the search results from a Public Access Catalog, short and infrequently-generated reports, and staff- furnished circulation control information to patrons regarding their own accounts. Typically these printer types fall into two categories. The impact printers utilize a print head which physically strikes the paper through an interposed ribbon. These printers are more reliable than other type, and can use multiple-part carbon forms, but they are noisier. The ink jet printers spray ink onto the paper. Because there is no physical impact, these printers are considerably quieter. They are, however, less reliable. Their ink jet sprayers can clog, and the ink jet cartridges are more expensive than ribbons. Also, ink jet printers function best with special rapidly-absorbing paper, which is more expensive. Currently, ink jet printer vendors have made some improvements to their ink so that this special (more expensive) paper may soon become unnecessary.

Software "Bug"

A problem detected in a piece of software that results in the strange and usually quite unexpected behavior of the system. Some "bugs" only appear intermittently and can be difficult to document and correct. "Bugs" are normally corrected by a software "fix" or "patch".

Software "Fix"

The solution to a problem or "bug" detected in a piece of software. A "fix" is sometimes also referred to as a software "patch". This entails a change in the programming code that makes up the software.

Software Upgrade

New features added to existing software. A software upgrade is normally added to a new release of software. While the new features may be wonderful, software upgrades sometimes require an expansion to existing hardware or they can affect your current procedures by making some changes that you were not expecting.

Strategies

Actions undertaken to reach an objective. Strategies can also be referred to as an "action plan".

Surge Protector/Suppressor

A device which contains electronic circuitry which rapidly responds to excessive current levels. The UPS surge protector is plugged into the electrical supply outlet for a computer, and the computer is then plugged into the surge protector. When sudden current increases occur, within several billionths of a second the surge protector reacts by diverting the excessive current away from the computer. Surge protectors also have performance ratings, and the purchaser usually gets what s/he pays for. The clamping speed is a measure of the swiftness that the device can react before the dangerous current levels can get to the computer itself.The faster the clamping speed, the greater the protection. The voltage or energy level is a measure of the degree of electrical impact the device can withstand, and the higher ratings mean greater protection. Nevertheless, please do not be lulled into a false sense of security because you have installed surge suppressors; in severe electrical storms, the only sure protection is to shut down the computer and disconnect it from its electrical supply source.

Task List

Also called a project task list or timeline. This is a description of all the steps that must be taken in the automation process. See Also Timeline.

Telephone Line, Analog (Voice Grade/Data Grade)

A telecommunications line that uses tones to communicate information. These lines cannot communicate digital information until it has been modulated into tonal (analog) information. This translation is performed by a MODEM. See MODEM. These lines are provided in two quality levels, or grades. A voice grade line is what we use for voice communication. It is generally of lower quality, subject to more static and other interference. The installation costs and monthly charges are lower than other data transmission lines. The quality of the line is usually satisfactory for occasional data transmission use. A data grade line is a higher quality line, and therefore more expensive. This grade of telephone line is used for permanent, exclusive connection of data transmitting devices like terminals and computers.

Telephone Line, Digital

A digital telephone line is a special, high-quality line (99.5% uptime guaranteed, typically), but which cannot conduct tones or voice at all--only digital data. These are sometimes called DDS lines (for digital data service). These are suitable only for dedicated communication between digital devices like terminals and computers, and are used when data accuracy, communications speed, and reliability are needed. DDS lines are often more expensive than analog lines, but in larger cities often the opposite is true. Some libraries are therefore beginning to purchase these.

Terabyte

1,024 gigabytes of information, approximately one trillion characters, or the complete text of approximately one million book volumes. (1,099,511,617,776 bytes). The largest data disk storage clusters, and governmental or institutional tape libraries are referenced in terms of terabytes. See Kilobyte, Megabyte, Gigabyte, Petabyte.

Terminal, Dumb

A workstation with almost no data processing abilities. A typical dumb terminal only knows how to talk to the computer to which it is attached, and therefore is almost completely inert without the computer itself.

Terminal, Intelligent

A workstation with considerable data processing abilities of its own. Typically an intelligent workstation is itself a microcomputer.

Timeline

In this case, a library automation timeline is a listing of project steps and associated completion dates. Timelines can also include an approximation of the amount of time each activity will require and associated milestones.

Title

A system data record containing the bibliographic information concerning a library holding. This information most closely resembles that which is found on a catalog card in the public card catalog. Compare with Item.

Title Data Entry/Update

The furnishing of information about bibliographic records to the library automated system. Depending upon the individual system, this information may be keystroked, it may be entered via disk or tape, or it may be directly loaded via cable from a bibliographic utility. Title data update is the modification or expansion of bibliographic information already existing in the library automated system. (Please see Bibliographic Record.)

Title Inquiry

The process of requesting and receiving information regarding a bibliographic record in the database, via any of the allowable access points. Typical access points include combinations, either partial or full, of the following: author, title, subject, call number, publishing date, and key word (any record containing any word in any location matching the authorized terminal operator's search strategy.

USMARC

An abbreviation standing for United States Machine Readable Cataloging. A magnetic tape format standard originally promulgated by the Library of Congress in 1968 for the purpose of distributing Library of Congress cataloging data. In the United States there are several slightly-different variations of this standard, each promulgated by different bibliographic utilities, e. g., OCLCMARC, RLINMARC, etc.

Uninterruptable Power Supply (UPS)

A device which contains a battery and rapidly reacting electronic circuitry. The UPS is plugged into the electrical supply outlet for a computer, and the computer is then plugged into the UPS. The UPS contains circuitry that detects reductions and losses of electrical power. When such events occur, within several billionths of a second, the UPS begins tap into its battery, supplying sufficient power to the computer for a temporary period of time. The length of time for battery depletion depends upon the power rating of the UPS. Typically, this rating is determined in watt-hours, and the library would select a UPS which could supply its computer for a period sufficient for an orderly shut-down. Many UPS devices also currently provide surge protection.

User's Group

A group of libraries who own a common automated and who meet to discuss the system's problems, additional needs, upcoming enhancements to the product, and local solutions. An active users groups can influence product development and company responsiveness.

Appendix B

Sample Long Range Automation Plan

This document is intended to be a sample long range plan designed to illustrate the components described earlier in the workbook. While this long range plan fits the needs of the local library of Farside, Texas, it may not meet all the requirements of your local governing body or other funding source. It is best to check with these agencies in advance of writing your plan to see if this type of document would be sufficient for their needs. The Farside Public Library is totally fictitious facility and this document should only be used as an example. It is not suggested that a configuration such as the one described here would be ideal for a library that happens to bear some resemblance to the Farside characteristics.

Long Range Automation Plan

for

The Farside Library

The Farside Public Library was established in 1954 in Farside, Texas. The library serves a population of 50,000 local and an additional 25,000 county residents.

The Farside Public Library's mission is to provide excellent library services in all areas of library operations and to educate patrons in the best use of a library. The library exists to provide an environment in which minds can grow, and to promote literacy and an active, informed citizenry. The exposure to the wealth of knowledge in the library and instruction in how to best use this information is an opportunity we consistently provide to our patrons in the hope that they make use of it throughout their life-long education.

While we hope to continually aim for our goal of excellence, ever-increasing costs of this labor intensive institution make it difficult to maintain a high level of service. In addition, while current library service is good, we are concerned that our students will not be prepared for the different world outside of our community. We realize that in order to attempt to move forward, the library staff must become more technologically aware and eventually, bring that technology into the library for patron use.

To this end, in 1986, the library acquired a microcomputer for administrative purposes. The computer has been put to good use in the areas of word processing, accounting and newsletter production. The active Friends of the Library group distributes a bi-monthly newsletter with library information and book reviews.

In 1987, the staff began to use the microcomputer to automate the cataloging aspect of the library. At this point, due to annual weeding and bi-annual inventories, information about approximately 30% of the collection has been stored in machine-readable form. Retrospective conversion is scheduled to begin in three months.

The serviced population has been growing steadily, and the city successfully passed a bond election which generated funds to be used along with grant awards to build a new, larger library. Plans for the new library project a building twice the size of the present facility. While the library staff has been adequate with the present building, a new building will also mean new services and more demands on the staff. Therefore, the library staff has been investigating ways to contain clerical activity as well as offer the new services that will be expected in the new building.

Automation offers an attractive alternative to manual circulation and card catalog functions and the library is interested in pursuing this avenue. The first step in this process, however, is a closer look at the goals and objectives the library has for automation. This plan is intended to formalize these. An automated system offers many benefits for our library including:

a. Reduction in tedious clerical activities such as catalog and circulation card filing and overdue notice generation, resulting in increased staff time for programming and help to utilize the library collections.

b. Improved information-gathering facilities, such as circulation/usage patterns, providing more informed collection-building decisions.

c. Enhanced search/inquiry capacity, thereby making the collection more accessible to library patrons.

d. The offering of previously unavailable services to patrons thanks to the facilities of the automated system.

The library envisions having a system that will automate circulation and the public access catalog as well as interface with the automated cataloging system already in use. With building plans projecting a completion date of November 1991, the automated system should be operational by February of 1992.

Goal: To provide better and more effective services to local patrons through increased control over the collection & greater facility in searching library holdings.

Objectives:
1. To install local system by February 20, 1992
2. To decrease time spent on clerical aspects of circulation (namely checkout, checkin, and overdue notice mailings) by 20%
3. To offer additional services such as holds and recalls to local patrons within six months of installation of the local system.
4. To provide at least 20% greater "hit rate" (more relevant items found) in searching of the catalog.

Strategy:

Objective 1
A. Follow timeline as closely as possible
B. Install system

Objective 2
A. Time manual clerical activities (if not done previously)
B. Install local system
C. Time automated activities
D. Compare results

Objective 3
A. Determine new services desired
B. Install local system
C. Write procedures for new services
D. Institute new services
E. Publicize new services

Objective 4
A. Survey present users concerning "hit rate" with card catalog (if not done previously)
B. Install system
C. Train users/create user "self-service" training aids
D. Survey users concerning "hit rate" with online catalog

The library envisions installing circulation first and then, 6 months later, following with an online public access catalog. Cataloging is already an automated process and will remain as it is presently being done, except that the information will be moved directly into the local system without the need for catalog card generation and filing.

In order to determine the size and type of system necessary for our library, we have already completed research into the local needs we would have for a system. What follows is a summary of those projections:

Storage Needs:

1. Bibliographic (Title) Records

Year 1	Year 2	Year 3	Year 4	Year 5
35,000	39,000	43,000	47,000	51,000

2. Volume (Item) Records

Year 1	Year 2	Year 3	Year 4	Year 5
39,000	43,000	47,000	51,000	55,000

3. Patron Records

Year 1	Year 2	Year 3	Year 4	Year 5
28,000	30,000	33,000	37,000	41,000

4. New Acquisitions

Year 1	Year 2	Year 3	Year 4	Year 5
4,000	4,000	4,000	4,000	4,000

5. Serial Titles

Year 1	Year 2	Year 3	Year 4	Year 5
125	150	150	155	160

6. Annual Circulations

Year 1	Year 2	Year 3	Year 4	Year 5
65,000	70,000	75,000	80,000	80,000

Terminal/Workstation Needs

Workstation	Location	Primary Functions
Terminal #1 (w/ Light Wand & Printer)	Circulation Desk	Circulation Control
Terminal #2 (w/Light Wand & Printer)	Cataloging Workroom	Cataloging Interface
Terminal #3	Children's Room	Online Public Access Catalog
Terminal #4	Central Library Floor	Online Public Access Catalog
Terminal #5	Central Library Floor	Online Public Access Catalog
Terminal #6	Central Library Floor	Online Public Access Catalog

Shared printer, Terminals 5 - 6.

Workstation	Location	Primary Functions
Terminal #7	Cataloging Workroom	File Server

Technical Expertise

The library director has been attending workshops and meetings discussing automation for the past year. She has done extensive reading on the subject and while she has not installed a system such as this one in the past, she has learned as much as possible about automated systems and concerns. In addition, two of the clerks in the library have attended courses in basic computer education as well as word processing at the local community college. The local high school library has already automated, and since there is good communication between that library and the public library, the director is assured she will have some input from someone with firsthand experience. In addition, the director has contacted the state library and receives advice and ongoing support from the automation consultant there. The director will be in charge of the project, however, one of the clerks has agreed to assist with system maintenance and support after installation.

Resources

A generous donor has pledged $30,000 for the automation of the library. In addition, the library has earmarked $10,000 from the bond election for the automation project. The library has an additional $5,000 for assistance with retrospective conversion as well as a promise of $3,000 from the Friends of the Library for use in buying associated furniture necessary. Volunteer assistance is also available as needed. If these funds are inadequate, the library will consider applying for grant funding to assist in the project.

Timeline

In order to better plan for implementation, the library has attempted to document an outline of tasks to be completed as well as the deadline dates for completion. Unless otherwise indicated, the dates reflect "ending" dates and not "starting" dates.

Initial Reading/Study of automation alternatives	August 30, 1990
Begin Retrospective Conversion Project	April 15, 1990
Meet with Vendors/Colleagues at TLA/ALA	July 1990
Long Range Plan	August 30, 1990
Vendors/Colleagues at ALA	February 1, 1991

Prepare Initial Budget	February 20, 1991
Prepare Functional Checklist	March 1, 1991
Schedule vendor demonstrations	July 1, 1991
Check with References	July 15, 1991
Short List of Vendors Chosen	July 25, 1991
Discuss Contractual Clauses with Vendors	August 31, 1991
Specific Pricing	September 15, 1991
Site Visits	September 30, 1991
Decide on top vendor choice	October 15, 1991
Negotiate Contract	October 30, 1991
Prepare Site	November 30, 1991
Order Barcode Labels	October 30,, 1991
Order Authority Control	October 30, 1991
Install Hardware	December 10. 1991
Install Software	December 10, 1991
Load converted records	December 15, 1991
Train Staff (Circulation)	January 5, 1992
Barcode Collection	January 15, 1992
Enter Patron Data (begin)	January 10, 1992
Revise Operating Procedures	January 30, 1992
Write Training Materials	February 15, 1992
Begin Circulation	February 20, 1992

Description of System:

Circulation Control

At the circulation desk there will be a terminal that will handle all circulation considerations. A light pen and printer will be attached to this workstation, providing the ability to scan the barcode of an item or a patron card for book checkout. In addition, this terminal will be used to register patrons, checkin books, inquire about status into the system and pay fines. Due to the volume of tasks that will be required in this area, it is estimated that in the second year of the project another terminal may be added, depending on the use of the system once it is installed. The system will automatically assign due dates, depending on library defined parameters, as well as assign fines if the material is overdue or generate notices to alert the patron to this status. New services envisioned include the possibility for "holds" on an item that is in circulation or on order. In this case a patron will request that her name be added to a list of those who await the arrival or return of a certain book and they will be notified when the book is checked in. Currently we are unable to provide this valuable service due to the amount of manual labor involved, and this capability will increase the utilization of our current investment in library materials. Best sellers on order will already have a "queue" waiting for their arrival and users will benefit from knowing they are on the list. In addition, we hope to acquire a system that will automatically generate a notice to the library if there are a large number of holds on an item to assist in future purchasing decisions.

Once the material is circulated, the system will generate information concerning the counts and detailed breakdowns of the usage of particular areas of the collection. This will also help in future collection development decisions as well as for ideas about displays to attempt to raise consciousness and circulation of different areas.

Cataloging

Though this area was automated in 1987, the local system will make it possible to move records from the cataloging service we presently use to the local online public access catalog easily. This will completely remove the need to generate and file paper cards. Since this was an extremely time-consuming part of our process, it is one area where we expect significant time savings.

Online Public Access Catalog (OPAC)

Maintenance of the existing card catalog is an expensive and tedious activity. Use of the card catalog has been proven to be frustrating and confusing to many of our patrons. We hope to significantly improve the use and success of use of our catalog by automating the access to our collection. Numerous studies have shown that use of a collection increases after OPAC's are installed. All age groups have enjoyed using this technology. However, since we realize that this is the part of the system that most people will contact directly and since our patrons come from a wide variety of level of technological sophistication, a "user friendly", easy to use system is one of our highest priorities.

Since this system will be integrated with the circulation system, a user will be able to determine whether a book is checked out by looking at the status of the item.

Finally, we feel that making our users aware of the technology available as well as training our children to make use of these tools in our library offers an opportunity for them to become familiar with the technology that will help them in future library use.

Appendix C

Using MARC Records

APPENDIX C

SMALL LIBRARY AUTOMATION:

THE CASE FOR USING USMARC RECORDS INSTEAD OF KEYSTROKING SHELF LIST INFORMATION

It is becoming increasingly apparent that USMARC-formatted Library of Congress bibliographic records are more appropriate than keystroking the local library's shelf list data. This is now true for any library large enough to automate its circulation control operations and/or public catalog, and the reasons are more than strictly economic.

REASON 1:

USMARC record import/export capability is no longer restricted to the realm of the $85,000 and up minicomputer-based system. It is now possible to have this capability on an IBM PC compatible system for less than $10,000.

There are at least two microcomputer-based systems with the ability to load and export records in USMARC format. Although there are some errors associated with the export software routines, the advantages of this capability outweigh any other data storage method. This conclusion is justified elsewhere in this report.

REASON 2:

For bibliographic database creation, the local labor costs are virtually identical either for keystroking all of the data from a Library of Congress catalog card, or for extracting USMARC data from a CD-ROM cataloging system.

The exact bibliographic data entry rate depends upon numerous site-specific variables, including the operator skill/experience and the quality of the shelf list. Nevertheless, my studies have revealed that a reasonable average keystroking rate for entering all of the information from an LC card is 30-40 records per hour. For the CD-ROM-based Braznet data entry operators, the documented average database conversion rate reached a maximum of 43 records per hour. Therefore, the difference in conversion rates is close enough that individual library operational characteristics would determine which method is faster.

REASON 3:

Keystroking is an error-prone process. Typographical error rates typically exceed 5 percent, and this translates into a corresponding loss of collection access. This problem is particularly acute when using volunteers or other large labor pools, where labor skills vary widely, and training overhead is high due to frequent turnover.

For example, if the operator misspells the author's name, the computer will index it exactly as it was misspelled. Thus, the author access to the record is lost. Patron behavioral studies show that users assume that the computer is correct. Therefore, when a computer states that the library does not have the title, the patron will simply give up, usually without asking for staff help.

REASON 4:

The typographical errors from keystroking are virtually eliminated by MARC "copy-cataloging," a process by which the library uses (and copies) existing electronic USMARC cataloging. Moreover, this USMARC cataloging provides higher-quality records, taking into account the new AACR2 cataloging rules and Library of Congress Subject Headings.

By copying existing cataloging, the library must keystroke only its specific local information. This information includes call numbers, accession numbers, and the bar code numbers affixed to the library materials. Therefore, for the same labor costs the library can obtain higher-quality USMARC cataloging, and avoid the loss of collection access that will occur whenever typographical errors appear in critical data fields. Also, since Library of Congress Subject Headings are a defacto U. S. standard, their use in the local library database provides a more universally-accepted means of access to the collection. This can help local patrons use other libraries throughout the United States, as these libraries are likely to employ LC subject headings. Visitors with LC subject heading knowledge could more easily search the local library catalog, thereby reducing the local library staff's instructional work load.

REASON 5:

The extra cost of the disk storage for USMARC records is relatively low, or even non-existent.

One library automation vendor has recently informed me that their recommended disk space formula for the keystroking data entry method is 1,000 records per megabyte. For full USMARC records, the formula is 500 records per megabyte. Therefore, a library with 20,000 titles would require a 20 megabyte hard disk for keystroked title entries, and a 40 megabyte disk for USMARC. The difference between the cost of the two disks is less than $500. A library with 10,000 titles would pay no extra cost, because the smallest available hard disk would suffice to contain either data format.

REASON 6:

The only major difference between the USMARC vs. non-USMARC records option is the method and cost of obtaining USMARC records both for retrospective and for ongoing database maintenance.

Keystroking records into an existing system does not require any additional resource commitment other than the labor and the shelf list, since the system itself provides all the necessary equipment (i. e., a keyboard, a computer, and the data storage device). The USMARC record copy-cataloging option does require additional resources. These generally include some type of access to the USMARC records, not only for retrospective conversion of the existing shelf list, but also for the ongoing cataloging of library materials during and after system implementation. There are many different conversion options for accomplishing these tasks, and the costs depend not only upon the conversion option, but also upon the vendors who provide that particular option's products and services. It is therefore necessary for every library to analyze its own needs and to consider all of its alternatives. Nevertheless, I have created a hypothetical library as follows:

--Current Bibliographic Title Count:	20,000 records
--Number of Titles Added Annually:	1,250 records
--Hourly Title Data Conversion Rate:	35 records/hr.
--Hourly Staff Compensation, w/ benefits:	$5 per hr.

I have included three conversion options for USMARC records, and used actual vendor quotes. Each option contains costs for the retrospective conversion and for the ongoing database maintenance:

Conversion Option 1: The library purchases the conversion service from its local automated system vendor

Retrospective Conversion Costs:

20,000 records @ $0.30/record (Delivery time: 4 weeks)	Total: $6,000

Ongoing Database Maintenance Costs:

1,250 records @ $0.30/record	Total: $ 375/yr.

Advantages:	--Faster delivery --No overhead
Disadvantages:	--No library control over process --Retroconversion more expensive than other options --No ongoing cataloging methodology, except continuing this process with the same vendor

Conversion Option 2: The library purchases a CD-ROM cataloging system, and performs retrospective conversion and ongoing database maintenance in house

(This option assumes that the library already has a microcomputer available for CD-ROM operations. There are four cost components associated with this conversion option: 1) the CD-ROM equipment and database, 2) the in-house retrospective conversion labor costs, and 3) the ongoing CD-ROM database costs, and 4) the in-house ongoing database maintenance labor costs

1) Costs for the CD-ROM Equipment and Database:

	One-Time (1st Yr.)
--CD-ROM Drive (Includes 1st Year Hardware Support)	$ 800
--CD-ROM Drive Hardware Support (ONLY After 1st Year)	---
--CD-ROM Database, Search Software, Manuals (Includes 1st Year Software Support)	2,170
--USMARC Database Quarterly Updates (Includes All Software Support, Payable ONLY After 1st Year)	---
Total for CD-ROM Equipment and Database:	$ 2,970

2) In-House Labor Costs: 20,000 titles @ 35 Titles/Hr. @ $5.00/Hr. = (Completion Time: 14 weeks)	2,857
Total Costs for Retrospective Conversion (Includes labor and all first year CD-ROM Costs):	$ 5,827

Advantages:
- --Library has control of project
- --Library saves $173, and owns the CD-ROM cataloging system outright.
- --Library has ongoing method for MARC records available in house.

Disadvantages:
- --Slower retrospective conversion completion time
- --Ongoing cataloging unit costs are higher than with other options

Conversion Option 2, Continued

3) Ongoing CD-ROM Database Costs:

Purchasing the CD-ROM seems advantageous, based on the costs savings associated with the retrospective conversion. Nevertheless, the ongoing database maintenance might become expensive, especially if the library added a only a small number of bibliographic records annually. Our example library would pay $1.11 per bibliographic record. In Conversion Option 3 (see Page C-6), the library could pay only $0.42 per record for MARC records. Our example library would have to add 4,321 records annually to reduce the unit record cost record for CD-ROM to equal the cost in Option 3.

	Ongoing (2nd Yr. & Thereafter)
--CD-ROM Drive (Includes 1st Year Hardware Support)	$ ---
--CD-ROM Drive Hardware Support (After 1st Year)	120/yr.
--CD-ROM Database, Search Software, Manuals (Includes 1st Year Software Support)	---
--USMARC Database Quarterly Updates (Includes All Software Support After 1st Year)	1,090/yr.
Total, Ongoing CD-ROM Database Costs:	$ 1,210/yr.

4) In-house ongoing database maintenance labor costs (1,250 titles/yr. @ 35 Titles/Hr. @ $5.00/Hr.) = $ 179/yr.

Therefore, the ongoing costs to maintain a MARC-based bibliographic database include the sum of 3) and 4) above, which is $1,389/yr. ($1,210/yr. + $179/yr.)

-and-

the per-record costs are $1.11 each ($1,389/1,250 records per year)

Conversion Option 3: The library uses a batch-process bibliographic utility that matches the library's LCCN's and ISBN's against that utility's database

Retrospective Conversion Costs:	
20,000 records @ $0.42/record	Total: $8,400
Ongoing Database Maintenance Costs:	
1,250 records/yr. @ $0.42/record	Total: $ 525/yr.

Advantages:
- --Faster database delivery
- --Little or no staff overhead
- --Ongoing conversion costs less expensive than for CD-ROM (in this example)

Disadvantages:
- --No library control over process
- --Retrospective conversion more expensive than other options
- --No ongoing cataloging methodology, except to continue this process with the same vendor
- --Library must find another source of MARC records for the non-matches

REASON 7:

It can be more expensive for the library to keystroke the records now, extract them from the system at the end of the its 4-year technological lifespan, and then upgrade these non-standard records to USMARC for loading into a newer system requiring MARC records. In addition to the extra expense, the library and its patrons would suffer through four years' usage of an inferior bibliographic database, and increased retrieval failures due to the inaccurate keystroking. Moreover, the library and would not as easily be able to participate in resource-sharing projects, since most of them require standard data formats in order to exchange electronic information.

I have identified two cost scenarios where our example library would keystroke the shelf list data, and then pay for upgrading the database to MARC. For both scenarios I used the costs already cited in this paper, and included actual vendor costs for MARC upgrade service. In Scenario 1 the estimated savings is only approximately $250 annually. In Scenario 2, however, the library would actually spend approximately $400 extra annually for keystroked records instead of having MARC records.

Scenario 1: Keystroking, and subsequent MARC upgrade--versus MARC from the outset by purchasing CD-ROM, performing the retrospective conversion and maintaining the database in house

The library began with 20,000 records and added 1,250 records per year over the next four years. When the library outgrew its system at the end of four years, the database contained 25,000 records. This would be the number of keystroked records that require the MARC upgrade in order to load the database to a new library automated system. To compare the costs between keystroking versus starting out with MARC records, there are four cost components: 1) equipment

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required to create the database, 2) labor to create the database, 3) database disk storage, and 4) MARC upgrade service for 25,000 keystroked bibliographic records.

(Scenario 1 Cost Summary)

	Keystroking	CD-ROM (MARC)
1) Equipment	$ 0	$ 6,600
2) Labor	3,571	3,571
3) Disk Space	250	750
4) Database Upgrade to MARC	6,250	180
TOTALS:	$ 10,071	$ 11,101

(Scenario 1 Cost Details)

1) Equipment required to create the database:

Keystroking: $0.00 (None--included with system)	CD-ROM: $6,600 ($2,970 for the first year, and $1,210 for each of the next three years: $6,600)

2) Labor to create the original database

Keystroking: $3,571 (25,000 records @ 35 records per hour @ $5 per hour = $3,571)	CD-ROM: $3,571 (25,000 records @ 35 records per hour @ $5 per hour = $3,571)

3) Database disk storage

Keystroking: $250 (20 megabyte hard disk)	CD-ROM: $750 (40 megabyte hard disk)

4) MARC upgrade service for 25,000 keystroked bibliographic records

Keystroking: $6,250 (25,000 records @ $0.25/record = $6,250)	CD-ROM: $180 (Vendor's MARC Output Software)

Scenario 2: Keystroking, and subsequent MARC upgrade--versus
MARC from the outset by hiring the local library automation vendor
to perform the retrospective and ongoing MARC database operations

Exactly as in Scenario 1, the library began with 20,000 records and added 1,250 records per year over the next four years. When the library outgrew its system at the end of four years, the database contained 25,000 records. This would be the number of keystroked records that require the MARC upgrade in order to load the database to a new library automated system. To compare the costs between keystroking versus beginning with MARC records, there are four cost components: 1) equipment required to create the database, 2) labor to create the database, 3) database disk storage, and 4) MARC upgrade service for 25,000 keystroked bibliographic records.

(Scenario 2 Cost Summary)

	Keystroking	Vendor-Supplied Conversion (MARC)
1) Equipment	$ 0	$ 0
2) Labor	3,571	7,500
3) Disk Space	250	750
4) Database Upgrade to MARC	6,250	180
TOTALS:	$ 10,071	$ 8,430

(Scenario 2 Cost Details)

1) Equipment required to create the database

Keystroking: $0.00 (None--included with system)	Vendor-Supplied Conversion: $0.00 (None--vendor-supplied)

2) Labor to create the original database

Keystroking: $3,571 (25,000 records @ 35 records per hour @ $5 per hour = $3,571)	Vendor-Supplied Conversion: $7,500 (25,000 records @ $0.30 = $7,500)

3) Database disk storage

Keystroking: $250 (20 megabyte hard disk)	Vendor-Supplied Conversion: $750 (40 megabyte hard disk)

4) MARC upgrade service for 25,000 keystroked bibliographic records

Keystroking: $ 6,250 (25,000 records @ $0.25/record = $6,250)	Vendor-Supplied Conversion: $180 (Vendor's MARC Output Software)

In summary, it is false economy to save $1,000 over four years by using keystroked records, even if the library operates a single-terminal circulation control system. A system this small would still involve a four-year total library investment exceeding $30,000. If, in the pursuit of cost savings, the library realized an actual loss, it would be a case of poor management. This waste of resources is exacerbated since, by using USMARC records from automation project inception, the library and its patrons would have reaped the benefits of enhanced collection access, improved resource sharing, and more effective public service.

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Appendix D

Minicomputer & Microcomputer System Comparison

APPRENDIX D

A Brief Comparison Between Minicomputer-Based and Microcomputer-Based Library Automated Systems

SCOPE OF THIS DOCUMENT:

This document outlines the basic differences between the characteristics of typical minicomputer-based and microcomputer-based library automated systems, all of which can be related to the large difference in costs. This report delineates the various system components normally associated with any library automation procurement, and explains the typical level of product support that the library can likely anticipate. It also provides some additional thoughts regarding the implications associated with non-standard bibliographic records and future automation flexibility.

MARKETING STRATEGIES:

There is a major distinction between the marketing of microcomputer-based and minicomputer-based systems. The basis for the difference rests on the costs of the different computer engines upon which these systems run. The more expensive minicomputers currently have additional capabilities in both the number of workstations that they can support and in the types of functions they perform. Because of their superior functionality and associated expense, a typical minicomputer vendor is able to build a larger profit into an individual sale. This extra income is significant, as it provides an enhanced capability for personalized library attention. The following example does not outline all of the costs associated with library automation projects; however, it does show the economy of scale in comparing similar system components:

1. Let us assume that a microcomputer vendor sells a single workstation circulation control software package for $2,000.

2. The cost of the software is therefore $2,000 per workstation and the cost of placing a trainer at the library for a day could cost $1,000. If a microcomputer software vendor provides much more than 1 day of training, the entire profit is lost.

3. On the other hand, a minicomputer-based circulation control system software license can cost $15,000, but can be utilized to drive many more workstations, perhaps 20 or more.

4. In this case the software cost per workstation is only $750. A trainer could be on site for 5 days and the company would still clear $10,000 in software license profits alone, not to mention the profits accrued on the remainder of the system components.

Of course, the major difficulty with this argument is that a small library cannot afford to invest approximately $85,000 minimum for the smallest minicomputer system. In order to automate at all, the smaller library must examine the microcomputer system market, and must therefore resign itself to the marketing reality that currently it cannot benefit from this economy of scale.

This marketing problem has been a constant concern of the larger library system vendors, who [illegible] attempt to expand into this very large and relatively unserved segment of the library portion. Certainly, one can anticipate that as the cost of hardware drops and [illegible] increases, some of the differences in functionality, cost/performance, and support will become less distinct.

The typical microcomputer-based library automated system procurement includes a software package purchase, with the software vendor recommending the proper hardware components for the system. The library then normally purchases the these components from a hardware vendor. The software vendor appears after the hardware installation in order to mount the software and provide the software training.

The minicomputer based vendors usually sell the library all of the system components, inspect the library site before installation, and install all system components (both hardware and software).

There is usually a large difference between the cost of typical microcomputer-based systems and those which run on a minicomputer. There are many reasons for this including but not limited to:

1. The amount of personal attention provided the customer. The mini-based vendors usually provide a toll-free 24 hour telephone line for user problems. They provide custom-designed training at appropriate intervals during the implementation.
2. The minicomputer systems are usually larger, having from six up to several hundred work stations in the network.
3. The minicomputer system vendors are continually searching the hardware market for system components which are not only compatible to their system but also provide either enhanced functionality, reliability, or value.

The remainder of this paper examines two major areas:

1. TYPICAL SYSTEM COMPONENTS:
    - a. Hardware
    - b. Hardware Support
    - c. Training Support
    - d. Software
    - e. Software Support
2. OTHER CONSIDERATIONS:
    - a. Acceptance Testing
    - b. MARC as a Standard
    - c. File Conversion

HARDWARE:

Includes the computer, disk drive(s) system console, system printer, terminals, screen printers, light wands, and communications/network equipment

Mini-based:

Usually one vendor sells the library all of the system components. This can be more expensive, but you can be more assured that the hardware is compatible with the software and all other system components.

Micro-based:

The software vendor can sell you the hardware, but often recommends that the library buy it less expensively from another source. Nevertheless, in the event of system failure, the software vendor often implicates the hardware. This problem becomes even more complicated when the library has a multi-user network, because there are numerous areas of potential component incompatibility. The library would be responsible to determine the source of the problem and the parties responsible for its resolution.

SOFTWARE:

Includes the computer programs, the instruction manuals and all other documentation which accompanies the system.

HARDWARE SUPPORT:

Includes the service procedures to repair/replace all hardware components when the system malfunctions.

Mini-based:

Typically there is one place to call for any problem, usually toll-free and available 24 hours. The vendor can diagnose the problem to determine its source, either hardware or software. The vendor contractually agrees to repair the problem within a certain length of time, or is willing to accept penalties, provide maintenance credits, and other remedies for unsatisfactory performance. Usually there is some replacement/exchange arrangement for peripherals like terminals and MODEMS.

Micro-based:

The library must determine the cause of the problem and contact the appropriate repair service. Sometimes it is difficult to isolate the cause, and often the vendors of the different system components blame each other. The hardware repairs are subject to the particular service arrangement that the library has with each vendor. Some of the vendors offer toll-free telephone assistance numbers.

SOFTWARE SUPPORT:

Mini-based:

Should there be a defect in the software, the vendor can usually dial into the system and repair it. Software enhancements are usually included; however, should the library decide not to install such upgrades, most vendors will support this option.

Typically the mini-based systems have user groups which provide input to the vendors for software development direction.

The manuals and other paper documentation are usually of high quality.

Micro-based:

Upgrades are usually provided only if the user recently purchased the earlier version, usually within 90 days or less. Thereafter, new software is not normally provided free of charge.

The documentation varies in its quality.

Typically there are no user groups.

Some of the software vendors offer toll-free telephone assistance.

TRAINING SUPPORT:

Mini-based:

The vendor makes several training visits during the course of the system implementation. Typically the first trip occurs after system installation and usually includes system operations, system parameter planning, and data entry training. Later sessions occur when appropriate to the implementation schedule, e. g., circulation control training is done after all of the patron, title, and item information is input.

Micro-based:

The vendor usually provides all training during the software installation visit.

ACCEPTANCE TESTING:

A contractually-defined methodology by which the entire assemblage of system components is tested and proven acceptable for library operations. Typically the vendor is paid in installments as each test is passed.

Mini-based:

Hardware Quality Acceptance Test: a 24 hour hardware performance test in which all hardware components are subjected to the manufacturer's diagnostic test procedures (e. g., CPU diagnostic test, disk storage/controller test, alphanumeric terminal unit acceptance test, etc.)

Database Load Performance Examination: a procedure requiring the successful loading and indexing of a specified number of bibliographic records

System Functional Competence Examination: a check of all system functional capabilities, based on vendor's proposal and the system manuals to verify proper execution.

System Storage Capacity Examination: an ongoing examination requiring the system be able to store a specified quantity of patrons, titles, and items throughout its life cycle. Should the system ever prove incapable of doing so, the vendor is obligated to provide all system components to accomplish this, at no cost to the library.

System Full Load Response Time and Processing Capacity Examination: another ongoing examination requiring the system to process all on-line tasks within specified time limits. Should the system ever prove incapable of doing so, the vendor is obligated to provide all system components to accomplish this, at no cost to the library.

System Availability Examination: a test of system reliability. The vendor guarantees that the system will be available for at least 98% of the time it is in operation. The test defines downtime amounts for all system components, so that even a broken terminal implies a certain percentage of the system is unavailable.

Micro-based:

Typically the vendors would not agree to these tests, except perhaps the System Functional Competence Examination and, if applicable, the Database Load Performance Examination. This refusal is appropriate, as the software vendor has no control over the hardware upon which the library chooses to run the program.

FILE CONVERSION:

The following files must be converted into machine-readable form for the computer to process.

Patron File:

Elements include name, address, system ID number, and other personal information. Also includes statistical categories for use analysis.

Creation Methodology:
Keystroking, however, some of the larger minicomputer-based vendors optionally provide data input from other machine readable files.

Item File:

Elements include system ID number, link to title record, location information (branch, call number, collection location) statistical categories for use analysis.

Creation Methodology:
Keystroking, but currently can be inserted by special computer programs with "smart bar codes."

Title File:

Elements include author, title, subject, Library of Congress Control Number (LCCN), International Standard Book Number (ISBN), library call number, links to the individual copies of the title in the library's collection.

Creation Methodology:
Can be keystroked. In the more primitive micro-based system, the library must utilize this method. It is prone to error, very time-consuming and expensive.

Typically a standardized machine readable format is used. This standard format is better-known as MARC (for Machine Readable Cataloging).

MARC AS A STANDARD

-- Forms the basis for virtually all of the exchange of bibliographic records in the U. S. and generally world-wide. Used by all bibliographic utilities as the method for storage, retrieval, and transfer of bibliographic information.

-- A record format which defines approximately 10 separate bibliographic formats (monographs, serials, microforms, musical scores, realia, etc.), each with up to several hundred field types, most of which are variable length.

-- Virtually all of the minicomputer-based systems utilize this format for the input of bibliographic records.

-- This standardization permits the migration of the title data base to a new system when the old one becomes obsolete. The major costs of re-creating this data base are thereby avoided. The importance of this capability has been recognized by the microcomputer-based library automated system vendors. At least two of them have provided MARC input/output capabilities. Others have plans to do so in the near future.

-- Since the design of these MARC bibliographic records is the same, the access methodology from system to system can be very similar. For example, in MARC the subject field is identified by the tag "650." If a computer knows that all data following the number 650 refers to the subject, then proper indexing and retrieval methods can be easily devised. This is very important not only for facilitating access by a single system, but also between systems for resource sharing and interlibrary loan.

FB11: MNMCRO

Appendix E

Automation Vendor List

TEXAS STATE LIBRARY
LIBRARY AUTOMATION SYSTEM VENDOR LIST
May, 1989

This list has been compiled to assist libraries in contacting vendors of automated library systems. The vendors listed are those who can respond to a Request For Proposal (RFP) for automated library systems, and inclusion on this list should not be interpreted as an endorsement by the Texas State Library.

Advanced Libraries & Information, Inc.
Division of Geac Computer Corp., Ltd.
2570 S. Beretania St.
Suite 207
Honolulu, HI 96826
(808) 973-1111

Brodart
Library Automation Division
500 Arch St.
Williamsport, PA 17705
(800) 233-8467

CALS Services Group, Ltd.
133 McKinstry Dr.
Elgin, IL 60120

CARL Systems, Inc.
777 Grant St., Suite 304
Denver, CO 80203
(303) 861-5319

CLSI, Inc.
320 Nevada St.
Newtonville, MA 02160
(800) 365-0085
(617) 965-6310

Carlyle Systems, Inc.
5750 Hollis St.
Emeryville, CA 94608
(800) 274-4274

Centennial College
The Bibliocentre
80 Cowdray Ct.
Scarborough, Ontario
Canada M1S 4N1

Centel Information, Inc.
11400 Commerce Park Dr.
Reston, VA 22091
(800) 843-4850
(703) 758-7100

Columbia Computing Services
8101 East Prentice Ave., Suite 700
Englewood, CO 80111-2911
(800) 663-0544

Comstow Information Services
249 Ayer Rd.
P. O. Box 277
Harvard, MA 01451-0277

Data Research Associates, Inc.
1276 North Warson Rd
P. O. Box 8495
St. Louis, MO 63132-1806
(800) 325-0888 (U. S.)
(800) 331-3515 (Canada)

Data Trek, Inc.
167 Saxony Rd.
Encinitas, CA 92024
(619) 436-5055

Dougherty County Public Library
300 Pine Ave.
Albany, GA 31701-2533
(912) 431-2900

Dynix, Inc.
151 East 1700 South
Provo, UT 84606
(800) 288-8020
(801) 375-2770

Easy Data Systems, Inc.
401 -1200 Lonsdale Ave.
N. Vancouver, BC
Canada V7M 3H6
(604) 986-8261

Ebsco Subscription Services
P. O. Box 1943
Birmingham, AL 35201
(205) 991-6600

Eyring Research Institute, Inc.
[see CARL Systems, Inc.]

Farmers Branch (Municipality of)
Data Processing Dept.
P.O. Box 819010
Farmers Branch, TX 76118

F. W. Faxon Company
15 Southwest Park
Westwood, MA 02090
(617) 329-3350

Follett Software Company
809 N. Front St.
McHenry, IL 60050-5589
(815) 344-8700
(800) 323-3397

Gaylord Brothers
Library Automation
P. O. Box 4901
Syracuse, NY 13221
(800) 634-6304
(315) 457-5070

Geac Computers, Inc.
350 Steelcase Road West
Markham, Ontario
Canada L3R 1B3
(416) 475-0525

General Research Corporation
5383 Hollister Ave.
P. O. Box 6770
Santa Barbara, CA 96130-6770
(800) 235-6788

Georgetown University Medical Center
Dahlgren Memorial Library
3900 Reservoir Rd., N. W.
Washington, DC 20007
(202) 625-7673

HCE Library Automation Systems
P. O. Box 1853
Burleson, TX 776028
(817) 447-2969

IBM /DOBIS
Library Marketing
472 Wheelers Farms Rd.
Milford, CT 06460
(203) 783-7350

Information Access Corporation
11 Davis Drive
Belmont, CA 94002
(415) 591-2333

Information Dimensions, Inc.
655 Metro Place South
Suite 500
Dublin, OH 43017-1396
(800) DATA-MGT
(614) 761-8083

Inlex, Inc.
1900 Garden Rd., Suite 200
P. O. Box 1349
Monterey, CA 93942
(800) 553-1202
(408) 646-9666

Innovative Interfaces, Inc.
2344 Sixth St.
Berkeley, CA 94710
(800) 444-2344
(415) 644-3600

J & K Computer Systems
1819 South Dobson
Mesa, AZ 85202
(602) 897-7861

LIBerator Information Systems &
Services, Inc.
1025 Holleybank Dr.
Matthews, NC 28105
(800) 234-2842
(704) 847-4753

Library Automation Products
875 Avenue of the Americas
New York, NY 10001
(212) 967-7440

Library Corporation of America
(The Intelligent Catalog)
P. O. Box 40035
Washington, DC 20016
(800) 624-0559

Library Systems and Services, Inc.
20251 Century Blvd.
Germantown, MD 20874
(800) 638-8725
(301) 428-3400

McKinney Memorial Public Library
200 N. Kentucky St.
McKinney, TX 75069
(214) 542-4461

Media Flex, Inc. (Mandarin)
P.O. Box 18625
Tampa, FL 33679
(813) 831-9130

Midland Public Library
Grace A. Dow Memorial Library
1710 W. St. Andrews Dr.
Midland, MI 48640
(517) 835-7151

Municipal Software Consultants, Inc.
3021 Gateway Dr., Suite 290
Irving, TX 75063
(214) 518-0728

NSC, Inc.
207 S. Main St.
Brillion, WI 54110
(800) 624-5720
(414) 756-5305

New Age Office Systems Inc.
(d/b/a: New Age/Orbit)
798 21st Ave.
Albany, GA 31701
(912) 888-3986

NOTIS Systems, Inc.
1007 Chruch St., 2nd Floor
Evanston, IL 60201-3622
(312) 866-0150

OCLC, Inc.
(LS/2000)
Local Systems Division
6565 Frantz Rd.
Dublin, OH 43017
(800) 848-5878
(614) 764-6000

Pennsylvania State University
LIAS Program Office
E. 506 Pattee Library
University Park, PA 16802
(814) 865-1858

Philsom Network--Washington University
School of Medicine Library
660 South Euclid Ave.
St. Louis, MO 63110
(314) 362-2788

Pike's Peak Library District
(Maggie's Place)
20 North Cascade Ave.
P.. O. Box 1579
Colorado, Springs, CO 80901
(303) 473-2080, ext. 241

Pueblo Library District
100 East Abriendo Ave.
Pueblo, CO 81004
(303) 544-1940

Ringgold Management Systems, Inc.
P. O. Box 368
Beaverton, OR 97075-0368
(503) 645-3502

Scholar Chips Software, Inc.
1700 Water Place
Suite 313
Atlanta, GA 30339

Sedna Corporation
P. O. Box 22436
Minneapolis, MN 55422
(612) 535-2326

Silverlake Systems, Inc.
6624 Jimmy Carter Blvd.
Norcross, GA 30091
(404) 448-7652

SIRSI Corporation
2904 Westcorp Blvd.,
Suite 209
Huntsville, AL 35805
(205) 536-5881

SOBECO Group
(Multilis)
505 Dorchester Blvd. West
Montreal, Quebec
Canada H2Z 1Y7
(514) 878-9090

Sydney Development Corporation
1385 West Eighth Ave.
Vancouver, B. C.
Canada V6H 3V9
(604) 734-8822

Systems Control, Inc.
P. O. Box 10025
Palo Alto, CA 94303
(415) 494-1165

Tampa Bay Management Services, Inc.
P.O. Box 260606
Tampa, FL 33685-9903
President's Plaza, Suite 215
4902 Eisenhower Blvd.
Tampa FL 33685-9990
(800) 237-3939

UNISYS
P. O. Box 500
MS/B140
Blue Bell, PA 19424
(215) 542-6340

Universal Library Systems, Inc.
1609-F Broadway
Bellingham, WA 98225
(206) 733-1732
205-1571 Bellevue Ave.
West Vancouver, BC
Canada V7V 1A6
(604) 926-7421

Univerity of Toronto
Library Automation Services
(UTLAS)
80 Bloor St. West
2nd Floor
Toronto, Ontario
Canada M5S 2V1
(416) 923-0890

University of Wisconsin
Memorial Library
728 State Street
Madison, WI 53706
(608) 262-2600

VTLS, Inc.
1800 Kraft Drive
Blacksburg, VA 24060
(703) 953-3605

Winnebago Software Company
121 South Marshall
P. O. Box 430
Caledonia, MN 55921
(507) 724-5411

Misc./Vendor

Appendix F

Data Conversion Vendor List

TEXAS STATE LIBRARY
DATA CONVERSION VENDOR LIST
May, 1989

This list has been compiled to assist libraries in contacting vendors of retrospective conversion systems and/or retrospective conversion services. The vendors listed are those who can respond to a Request For Proposal (RFP) for such products and services, and inclusion on this list should not be interpreted as an endorsement by the Texas State Library.

Access Innovations, Inc.
P.O. Box 40130
4314 Mesa Grande St.
Albuquerque, NM 87196

AMIGOS Bibliographic Council, Inc.
11300 North Central Expressway
Suite 321
Dallas, TX 75243
(800) 843-8482

ATLIS Corporation
Library Services Division
6011 Executive Blvd.
Rockville, MD 20852
(800) 638-6595
(301) 770-3000

Auto-Graphics, Inc.
3201 Temple Ave.
Pomona, CA 91768
(714) 595-7204
(800) 325-7961
(800) 828-9585 CA only

Bibliofile
The Library Corporation
P. O. Box 40035
Washington, D. C. 20016
(800) 624-0559

Bibliographical Center for Research
4500 Cherry Creek Drive, South
Suite 206
Denver, CO 80222
(303) 691-0550

Blackwell North America
1001 Fries Mill Rd.
Blackwood, NJ 08012
(800) 257-7341
(609) 629-0700 NJ only
FAX: (609) 629-0438

-or-

Blackwell North America
6024 SW Jean Rd., Bldg. G
Lake Oswego, OR 97035
(800) 547-6426
(503) 684-1140 OR only
FAX: (503) 639-2481

Brodart, Inc.
Library Automation Division
500 Arch St.,
Williamsport, PA 17705
(800) 233-8467

-or-

Brodart, Inc.
Library Automation Division
1609 Memorial Ave.
Williamsport, PA 17705
(800) 233-8467

California Library Authority for
Systems and Services
(CLASS)
1415 Koll Circle
San Jose, CA 95112
(408) 289-1756

Carrolton Press, Inc.
REMARC Division
(SEE UTLAS)

The Computer Co.
1905 Westmoreland St.
Richmond, VA 23230
(804) 359-0193
(800) 327-5160

Electronic Keyboarding, Inc.
140 Weldon Parkway
Maryland Heights, MO 63043
(315) 576-1780
(800) 325-4984

Gaylord Bros.
(See Library Systems and Services, Inc.)

General Research Corporation
(Library Systems)
5383 Hollister Ave.
Santa Barbara, CA 93111
(800) 235-6788

Inforonics, Inc.
550 Newtown Rd.
P.O. Box 458
Littleton, MA 01460
(617) 486-8976

Ingram Library Services, Inc.
347 Reedwood Drive
Nashville, TN 37217
(800) 251-5902
(810) 371-1092
FAX: (615) 793-3825

LIAS Program Office
E 111 Pattee Library
Pennsylvania State University
University Park, PA 16802
(814) 865-1818

Library of Congress
Office of Chief,
Cataloging Distribution Service
Washington, DC 20541
(202) 287-6120

Library Systems and Services, Inc.
Division of Gaylord Bros.
General Motors Bldg.
1395 Picard Dr., Suite 100
Rockville, MD 20850
(301) 258-0200
(800) 638-8725

Marcive, Inc.
P. O. Box 47508
San Antonio, TX 78265
(800) 531-7678
(512) 646-6161

MITINET
Information Transform, Inc.
502 Leonard St.
Madison, WI 53711
(608) 255-4800

OCLC, Inc.
Retrospective Conversion Service
6565 Frantz Rd.
Dublin, OH 43017-0702
(800) 848-5878

Pittsburgh Regional Library Center
Beatty Hall
Chatham College
Pittsburgh, PA 15232
(412) 441-6409

Research Libraries Information
Network (RLIN)
The Rearch Libraries Group, Inc.
Jordan Quadrangle
Stanford, CA 94305
(415) 328-0920

SANAD Support Technologies
5611 Kraft Drive
Rockville, MD 20852
(301) 984-2259

SOLINET
Southeastern Library Network, Inc.
Plaza Level, 400 Colony Square,
1201 Peachtree St.
Atlanta, GA 30361
(404) 892-0943

University of Toronto Library
Automation Systems (UTLAS)
CATSSERVICES
80 Bloor St. W.
2nd Floor
Toronto, Ontario
Canada M5S 2V1
(416) 923-0890

-also-

UTLAS International
REMARC Division
8300 College Blvd.
Overland Park, KS 66210
(800) 338-8527
(913) 451-3111

Western Library Network Computer
Service (WLN)
Washington State Library
Batch Retrospective Conversion
AJ-11
Olympia, WA 98504
(206) 459-6539
(800) 342-5956

FB17: DCVend

Appendix G

Functional Specifications

Functional Specifications

These lists are not all-inclusive, but rather a description of some of the usual system characteristics that client libraries have considered important in their daily operations. Please use these lists as a starting point from which to establish your own automation needs.

Circulation Functional Specifications

1. The system should allow easy access between various functions in the Circulation Control System with a minimum of keystrokes. An operator should not have to "back out" of a function and re-enter another related one. For example, when encountering a delinquent patron during the checkout process, it should be very easy to access the delinquency reasons and to resolve or override them. It is awkward to have to leave the checkout function for an inquiry function in order to learn the delinquency reason, and then have to access a fine payment function in order to collect the funds.

2. All changes to all files should be immediate, not updated in a later batch or background operation. For example, when an overdue item is checked in, its status should immediately read "on shelf" . The associated patron status should also immediately and automatically become "delinquent", with the appropriate reasons.

3. The system patron data entry process should be easy, store all of the necessary patron information for your library operations, and permit the chargeout of materials immediately upon registration. Some specific items to include would be:

--sufficient numbers of patron categories, with different automatically assigned borrowing privileges and statistical tracking for each group

--branch registration locations

--automatic/batch deletion of inactive patrons either by expiration date or last use

--bar codes utilizing a standard format, and containing check digits to reduce the number of data entry errors

4. Patron data files should only contain current information regarding the materials checked out and the delinquency reasons if applicable. More specifically, in order to assure patron privacy, historical information regarding

patron reading habits should not be maintained or otherwise be retrievable from the system. Some recommended items to be kept in patron files, each of which should have a specific delinquency threshold are:

--overdue items, with their associated due dates

--recalled items, with their associated due dates

--claimed returned items, with their associated due dates and dates claimed returned

--overdue fines owed, the items, their associated due dates, and the dates of return

--damages or fees assessed, the items, their associated due dates, the dates of return, and the damage or fee type.

--reserved items, not only those currently being held for pick-up but also the holds which the patron has placed.

--a free text field of at least 100 characters

5. Patron blocks to borrowing including:

--delinquency status, as above

--not registered

--registration expired

--lost, stolen or missing card

--incomplete patron information in data base

--excessive materials checked out

--manually-set delinquency status, with reason(s)

6. Blocks to the borrowing of specific items include:

--non-circulating

--reserved for another patron

--not discharged

--not owned by this branch

--data entry incomplete

--not in data base

--missing, lost, claimed returned, with option to re-add and adjust (automatically) all associated files. These would include item status, patron status and blocks, and bibliographic records.

7. The checkout function should run smoothly, allowing optical scanning of patron bar codes and item bar codes.

--When a block is encountered, there should be an easy method to determine the reason for the block, and an efficient way to either resolve it or to override it with proper authorization.

--It is especially useful to be able to proceed with checkout even if the patron or item bar code is new to the data base. This is often called "on-the-fly" registration/circulation.

8. The checkin function should run equally smoothly, and include the applicable patron and item blocks as listed above.

--It is very useful for an authorized operator to be able to reset the checkin date to another day. This would account for those days when the library is closed.

--Another helpful feature is a built-in grace period; however, this is not a satisfactory substitute for the ability to reset the checkin date.

--The checkin should provide the option of automatically posting the applicable fines to the patron's account.

9. The renewal function should not only check for all of the same patron and item blocks, but also should include an additional block for exceeding the prescribed number of consecutive renewals for that item.

10. The hold function should permit several types of holds/queues:

--systemwide hold: traps the first copy of a title upon arrival at any branch

--branch hold: traps the first copy of a title owned by that branch which is checked in at that branch

--item specific hold: traps the exact copy of that title

Other characteristics of a well-designed hold function would include:

--the ability to rearrange the order of the hold queues listed above

--tracking the status of the item during interbranch shipment

--automatic adjustment of the hold queues, as the respective hold requests are filled

--automatic generation of the pick-up notice upon arrival at the pick-up point

--system generated alerts when the number of holds grows beyond a certain user-defined level

--a hold expiration date resulting in automatic deletion after the date has passed

--automatic cancellation and patron notification for all holds affected by the loss or withdrawal of library materials

--manual cancellation of holds by an authorized operator with the option to notify the affected patrons with the reason for the cancellation

11. For those libraries using the recall function, it should be possible to choose the individual patron(s) to receive the notice(s). The failure to return the recalled item(s) within a library-specified period should result in a borrower block. (A recall is the sending of a notice that asks the patron to return a borrowed item even though the item is not yet due.)

12. The fines and fees processing should permit the following:

--automatic fine calculation based on a combination of patron category, material type, and amount of time overdue, allowing for grace periods and a maximum fine per item

--automatic fine posting upon checkin or renewal, unless otherwise disabled by an authorized operator

--default cost assignments for damaged items by media code, when the specific costs are not otherwise available

--manually-assigned fees by an authorized operator

--the assignment of partial payments or waivers to individual line items in the patron's file, with the associated dates of payment and the authorized operator ID conducting these transactions

13. Notice production should contain the following features:

--user-defined periods for the timing of the notices, and for the number of notices to be sent

--user-defined wording for the notice messages

--production/printing/reprinting of the notices in zip code order, in a format suitable for data mailer forms use (these forms eliminate the need for envelope stuffing)

--all appropriate data elements: notice type, notice message, patron name and address, author/title/call number, item bar code(s), due date(s)

--different notice types: overdue reminder, bill, fines owed, hold/ILL availability, hold cancellation, fees/damage assessment, recall, unlocated claimed returned items

14. Statistical Reports should be as flexible as possible with combinations of choices from the following lists:

--saveable basic report elements: formatting capabilities, data content and headings, mathematical operations; choice of output medium, batch or online access

--time periods of compilation: choice of day, month to date, academic year to date, fiscal year to date, comparison to previous parallel period

--groups over which compilation is made: by operator/password, individual terminal(s), by branch or group of branches, entire system, by patron class, item statistical class, media code

--variables to be counted and/or listed should include:

items charged, discharged, renewed, recalled, on hold, with hold requests,
missing, lost, claimed returned, rarely circulated
patrons registered, added, deleted, blocked
titles held, added deleted, lacking item records
business transactions such as fees collected/waived and by whom

16. Most circulation control systems do not have authority control subsystems. If present, however, the authority control system should be capable of loading, indexing, and outputting of authority records in USMARC/OCLCMARC/ RLINMARC formats. The input/update methods should include the same as for the bibliographic records. The subject access to the system should include "see" and "see also" references, which may be apparent or transparent to the user. It is preferable to have global replacement in all affected bibliographic records whenever a subject heading is changed.

17. The system should be able to load and index complete item (copy) records which have been added to the bibliographic records listed above. (This is extremely helpful during the initial item conversion)

18. The system should provide an audit trail with provisions to identify staff clearing fines, accepting payments, claiming items returned or "forgiving" lost books.

Online Public Access Catalog Functional Specifications

1. System must act as an Online Public Access Catalog of all of the holdings of the library providing access to and displaying information contained in the bibliographic database including item records.

This can include serial titles, audio-visual material, paperback books, sound recordings, etc. Rather than being simply a listing of all library holdings, the system should provide search and retrieval facilities of a much more complex nature. In addition to information concerning the bibliographic records, item or copy information should also be displayed in order to have specific call number and status information.

2. System OPAC must provide access to and display information contained in the shelflist , with item records, by providing access by call number.

In order to discontinue use of a paper shelflist file, it is important to have the ability to view the file in call number order.

3. System OPAC must provide access to information contained in the stopword list.

In order to avoid having searches run on articles (a search on the word "the" might not prove very useful and would certainly require a large amount of computer resources), libraries often create a "stopword" list of words that will be ignored in the search process. It is helpful, however, to be able to see the words on the stopword list in order to determine if the term you need is really not present in the collection or if it is only being blocked. If it is blocked and you wish to search on this term, you should have the capability to "mask" the stopword and indicate that you are really looking for that term.

4. Authorized users should have the ability to "mask" stopwords in order to conduct a search using them.

As described above, it is sometimes desirable to actually conduct a search on a word that would normally considered a stopword. For example, a library with a large Spanish language collection might consider including Spanish articles on the stoplist such as Los or El. Then a patron attempts a search on "El Paso" or "Los Alamos" and you need to actually include those terms.

5. System OPAC must allow search/retrieval by the following:

a) ISBN
b) ISSN
c) Library of Congress card number
d) Bibliographic utility control number
e) author (personal & corporate)
f) author/title
g) title
h) series
i) Dewey call number
j) added entries, personal and corporate
k) unique item number
l) subjects

These are the types of searches that would be easily available. Libraries sometimes determine a subset of these would be sufficient for their needs. Remember, however, that this indexing can also influence the way staff searching is done as well as the public. For example, while your normal patron would probably not institute a search by ISBN, your technical services personnel may want this feature.

6) The system OPAC must allow search limiting by :
a) Language
b) Date
c) Format

Once you have conducted a search, it is often helpful to be able to further define the records retrieved (especially in the case of a large number of "hits") by these specifications.

7) The system OPAC must display circulation status of records in clear manner.

It is preferable to easily be able to see whether an item is checked out by checking the item screens on the OPAC.

8) The system must be user friendly, providing prompts and other information in easily understood messages.

9) Access to the OPAC must be provided by direct line connection, multiplexor and dial-up access ports.

If you want the ability to have patrons outside the library search the OPAC from computers at their homes, you will want this facility to be included in your specifications list.

11) Access to the Online Public Access Catalog shall be controlled by a multi-level security authorization system.

Many systems provide entry to the use of the system at different levels. This is to secure the operating system and other sensitive files (such as patron information and borrowing habits) from users who should not have access. Also, in larger libraries, circulation activities would be limited to circulation staff and professionals, technical services operations to tech. services personnel, etc.

12) The opening screen or instructions shall enable the patron to initiate a search session by initiating a command, in two keystrokes or less, which will display examples of correct syntactic structure.

In order to make searching easier, many libraries prefer to have the search session be easily started and also, it is felt that having examples of the correct way to enter a search will be more useful that only written directions.

13) The system shall provide online help facilities which are provided at point of access.

Many libraries prefer a system that allows a patron's request for help to be answered by the system in a manner that reflects the function in the program that was being attempted when the help message was entered. For example, if you faced with a screen that asks you to choose between an author, title or subject search and you do not really know what you want, you would press the "help" button and the system would describe the choices given. A word of caution is necessary for this specification: Some systems do not have "help" facilities because the software is simply not that sophisticated, some have worthless help facilities, some do not have "help" facilities because they feel the system is so sophisticated that these are unnecessary and some have adequate help features that would fulfill this specification. It is up to you to decide where the system you are studying falls - rather than just checking for the existence of a "help" facility, you must determine if it will really suit your needs.

14) System OPAC must provide for right truncation of search terms.

Right truncation provides the ability to search of a range of terms. Generally a user will type in a pound or dollar sign (# or $) at the end of a term to mean "plus any endings found". For example, an entry of "Librar$" would retrieve "Library, Libraries, Librarian,", etc. This facility can be very helpful in searching for plural and related terms or even in an attempt to catch misspellings.

15) System should provide for a thesaurus of terms, or "see" and "see also" references.

In order to move from the search term you have already used to an accepted or related term these facilities are necessary. A thesaurus would provide you the opportunity to see terms that are related to the term you have indicated. "See" references would refer the user to the accepted term and "see also" references would provide direction to related headings. To make best use of this facility, your records would have to have some sort of authority control applied to them.

16) System should provide for browsing of the database

"Browsing" a heading can mean different things to different vendors. Normally, browsing means access to an alphabetical listing of terms with the term of your choice highlighted in some way in the list. It is much like entering a dictionary of entries and it shows how the term is entered and sometimes also indicates how many records there are in that heading. Browsing can be very helpful in determining whether the search term you have entered is actually entered slightly differently in the catalog. This facility, however, may not be as helpful as a thesaurus facility or good cross-references.

17) System should provide for boolean searching of the database using "and, or, not" expressions.

Boolean searching is very helpful in narrowing or widening a search. It is a difficult search, technically, to provide and also tends to be very "machine-intensive", meaning that it requires a good deal of computer power to provide. Therefore, some systems will not be able to provide this capability.

18) System should provide for keyword searching of at least the title but preferably the searching of more than one field to be defined by the library (for example, author, title, subject)

Searching by keyword results in records that have the keywords noted somewhere in the record itself. Depending on the system, a keyword search may only scan the title field in a record, or it may look throughout the entire record for the terms noted. It is helpful to know how a keyword search will be conducted in the system you are examining.

19) System must have an explanatory facility capable of instructing the user how to best use the system's features.

Many libraries like to have the option of a general overview of system characteristics and features for those patrons who will take the time to read instructions.

20) In using the online public access catalog, the search command language provided to authorized users must request clarification if unable to interpret a user's command or response.

In order to make the system easier to use, it is often helpful to have some indication on mistakes made in entering a search. Patrons are more encouraged to continue if the system responds by saying :"Please indicate type of search desired." rather than simply, "No records found."

21) In using the online public access catalog, the search command language provided to authorized users must prohibit damage to system or inadvertent deletion of search progress.

This is basically an attempt to "user proof" the system. Most systems provide facilities to protect the system itself, however, it is important to assure that entry into the operating program or source code of the system is not an easy task for unauthorized personnel.

22) In using the online public access catalog, the search command language provided to authorized users must provide the ability to back up and recover following a user error in logic or misuse of a functional capability.

A sure fire way to inhibit patron use of the system is to have them throw it into an "infinite loop" (a term that indicates that the computer performs one command over and over again - much like a record skipping on a stereo except that you can't pick up the tone arm and continue playing the record). It should be up to system manufacturers to guard against this as much as possible.

23) In using the online public access catalog, the search command language provided to authorized users must provide editing of and correction for input errors prior to execution.

It is very frustrating to make a typing error and then be unable to correct it without starting all over again (especially if you are a bad typist). This facility allows editing before the search is begun.

24)In using the public access catalog, the search command language provided to authorized users must provide error messages which are brief, descriptive, positive in tone, in standard English and not be displayed in a manner that would attract attention to the user.

In order to encourage patrons to keep using the catalog, any error messages supplied by the system should follow the advice above. Since many of these requirements are rather subjective, it is a local decision as to whether or not the vendor complies. Basically you want to avoid a situation where the system makes a loud "BEEP!!", and flashes a message on the screen that reads something like " WHY IN THE WORLD DID YOU EVER THINK THAT THE EXCUSE FOR BOOLEAN LOGIC YOU USED WOULD EVER RETRIEVE ANY INFORMATION PRESENT IN THE 650 FIELD WHEN YOU HAVE ALREADY SPECIFIED A SEARCH OF THE 245???? TRY IT AGAIN AND THIS TIME GET IT RIGHT!"

25)In using the online public access catalog, the search command language provided to authorized users must provide a break capability allowing user to stop searches-in-progress (during execution) or display of results.

Sometimes you retrieve the information you want very quickly or more often you realize that the search is retrieving something completely different than you had ever intended. At this point it is helpful to be able to stop the search and try again.

26) The system shall provide for keyboard error correction by deletion by back spacing and then re-keying.

This goes along with trying to make correction as easy as possible for the poor typists of the world.

27) The system shall notify user that a search expression or command is being processed by display of a visual "wait" message.

Since your users will soon gain a new definition of "slow" once the system is in operation (10 seconds never seemed so long), it is helpful to have the system let the user know that it is actually working on a search (when it is) and that it is not just "broken". If the system does not do this, chances are you will have patrons hitting the "return" or "enter" key over and over again in order to get the system to "do something. This is not particularly helpful to the patron or the system itself and it should be avoided if possible.

28) Structure of command statements must be patterned on familiar, natural language phrase structures.

In an attempt to make the system as easy to use as possible, this is a helpful feature.

29) Screen displays should be uncrowded and straightforward.

A crowded, complicated screen display is extremely "user unfriendly" and should be avoided. Of course, this is one of those subjective areas that must be determined by the local library. It is helpful to have people with little experience with computers look at the screens and register their response.

30) Library should have the option to determine what elements of a record will be displayed in various searches. Options should include at least, but not be limited to: brief record, item record, full record, MARC record.

Due to the many fields available for display in a MARC record, libraries often prefer the option to choose what information they want to display. In addition, it is helpful to have a brief record (possibly only the title and author or status, call number, etc.) that will display when more than one "hit" is retrieved. For example, if a patron enters, "Top$", looking for information on wooden toy tops and there are five records that have the word somewhere in the body of the record, a brief record like the one below would help the user determine which one he really wants:

1. Fun With Tops and Yo-Yo's..S. Claus

2. On Top of Old Smokey: The Great Passenger Railroad Era......G. M. Pullman.

3. Z.Z. Top: Texas Blues..D. Hill, B. Gibbons, F. Beard

4. I Was Top Dog for Longer Than I Can Remember.......................R. Reagen

5. High-Top Heaven..K.A. Jabbar

Obviously, only #1, would be useful to this user, though he might decide that some of the other entries would be interesting. Next the user would request more information on the record he is interested in, or if enough information is given at this point, he will simply stop the search and go get his book. Once you have the option of choosing what is displayed in a record, it is up to you to determine what would be most helpful to your users. The ability to display MARC is usually more important to the library staff than general public, however, there may be an instance where someone wants to check more information than is available on your fuller screen.

31) System should allow for easy printing of retrieved records by either screen printing or file printing.

If you decide to offer the capability to print records to your patrons, it should be easy to do. Usually there are at least two methods of printing: one that simply makes a copy of what is on the screen and the other that prints a file, possibly as it scrolls on the screen.

32) A user must be able to initiate and terminate searches with a minimum of three (3) keystrokes.

This is another attempt to simplify the search process.

33) System must be able to terminate search session after a library-specified time period of inactivity at a terminal without the need or intervention of a programmer.

Many times users simply walk away from a terminal before completing a search. In order to avoid having a terminal tied up in a search that is no longer being used, many systems will allow the library to set a "time-out" period (5 minutes? 10 minutes?). If no information is entered in that time, the system reverts back to its "welcome" screen and is ready to begin the new search.

34) The system must store search results until the user completes the search session.

If search results are stored throughout the entire search, the user can go back and refer to them and that can prove very helpful.

35) System should provide capability to combine results of previous searches in new search expressions.

If search results are saved, as indicated above, it is helpful to be able to say "I would like all the hits from search 3 combined with search 5." This avoids additional typing and saves computer resources since search 3 and search 5 are smaller groups of information than the entire database.

36) System must, upon command, be able to scroll or page backwards and forwards in the screen displays of search expression formulation or of bibliographic record display.

In order to check previous search results, it is helpful to be able to scroll backwards and forwards. If the system can give you access to past searches or information that has already scrolled past on the screen without this scrolling feature it would have the same effect.

37) The library must be able to specify a ceiling of postings for any search expression without the need or intervention of a programmer.

Usually, it is helpful to be able to limit the number of "hits" that will be reported for any given search expression. This is to limit a search like "Texas" to generate an overwhelming number of hits. Patrons often find a search resulting in "too many" hits to be intimidating. With a reduced number of postings given, patrons will usually get to the correct area of the collection, even though they do not receive all listings. Many systems offer an alternative where the system informs the user that an excessive number of hits have been located, and asks the user to narrow or qualify their search. How many is "too many" or "excessive" is often left to local discretion and it is usually preferable that it be easy to change this ceiling depending on local circumstances.

38) Authorized operators must be able to override the posting ceiling block.

Of course, as soon as you set a ceiling, someone with a perfectly legitimate reason will need to override this block, so it is advisable that you have the ability to allow for additional postings.

39) System should provide for proximity operators when searching the database.

If you would like the ability to specify search words within a certain proximity of each other, this facility is helpful. This is desirable when the search term is not always entered the same way or when you are interested in two separate terms appearing closely linked by some combination of articles or other words.

40) The library must be able to specify a ceiling of pages or records printed for any search session.

While many libraries opt for having printers attached to their public access catalog terminals, many also determine a ceiling of postings that can be printed out at one time in order to control massive printing sprees. If you have the OPAC's located near the reference or other staffed area, chances are good a staff member will hear the continuous printing and come over to check out the situation, however, if you locate terminals throughout the building, if you have a very small staff that will not be able to watch out for this and if you have a clientele that is likely to print off massive quantities of "hits", this could be a facility you are interested in. Of course, as mentioned with the ceiling for screen postings, you would probably want the ability to override this facility as well.

41) Patron should be able to specify which records or range of records to be printed.

It is helpful to be able to specify exactly the records you would like printed or at least the range of hits.

42) All displays, except for MARC record display, should have field labels in common language to make them meaningful to the general public.

In order to make the screen display of the OPAC as "user friendly" as possible, it is helpful to label each displayed field with an identifier that is understood outside the doors of our technical services workroom. Most systems use "Author", "Title", "Date", etc. and some systems allow the library to determine what they will call each field. This is yet another advantage of the OPAC over the card catalog. How often have you had to explain a card catalog card to your patrons?

Also desirable: Left and imbedded truncation, logical nesting operators, intentional searching of stop words, view of summary history of search expressions, retrieval of terms for authority file for use in formulating search expressions.

General System Functionality

1. Library must be able to assign and re-assign security authorization access ID's to each terminal and/or port at will, without the need or intervention of a programmer.

2. The system should be capable of accepting data in USMARC format, or a nationally-recognized variation such as OCLC/MARC or RLIN/MARC, and retaining all of the data elements present in the input record. The system should be capable of outputting bibliographic records in the USMARC format with all data elements present in the input record, except that the output should (must) be the current version of the record after all updates have been made. The input /updating methods should include:

--USMARC/OCLCMARC/RLINMARC formatted tapes

--direct data input from all bibliographic utility terminals

--direct date input from cataloging system terminals (typically CD-ROM based)

--direct keystroking into a system-supplied MARC workform

--data input from library materials vendors, either via magnetic tape or via direct data transfer

3. System must reconstruct for electronic output complete bibliographic records in MARC format (including record leader fields, all MARC tags for fields and sub-fields, fix length fields, variable length fields and using proper MARC field delimiters)

4. System should provide ability to generate "see" and "see also" references.

5. System should have supplied documentation that clearly explains system operation.

6. System should be integrated, i.e., use a common database file for a variety of applications, allow the patrons and library staff to search the entire database by initiating one search command, allow users to move freely from one subsystem to another.

7. System must support multiple users accessing different subsystems at one time.

8. System must provide an interface to move records from the local cataloging source of choice and the automated system.

Date of Demonstration: ________

Product Name: ________________

Vendor # __________

Vendor Name: ____________________

Functional Module: __________________________

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You would fill in the date of the demonstration, the product name, the vendor order number (is this the first system you've seen?), and the vendor name. Also you would specify the functional module being demonstrated (i.e., circulation, online public access catalog, etc.). On the answer line, you would note if a system could or could not meet the specification or if they handled the process differently. Note space, though limited is available for anything you wanted to specifically remember. Also, the column to the far right is to indicate the ranking of importance that you have assigned this feature.

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The following sources were used in the creation of this workbook, along with information provided by many library automation vendors. If you would like to see any of the materials noted here or other sources on library automation, please contact: Anne Ramos, Librarian, Library Science Collection, Texas State Library (800) 252-9386 or (512)463-5494.

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